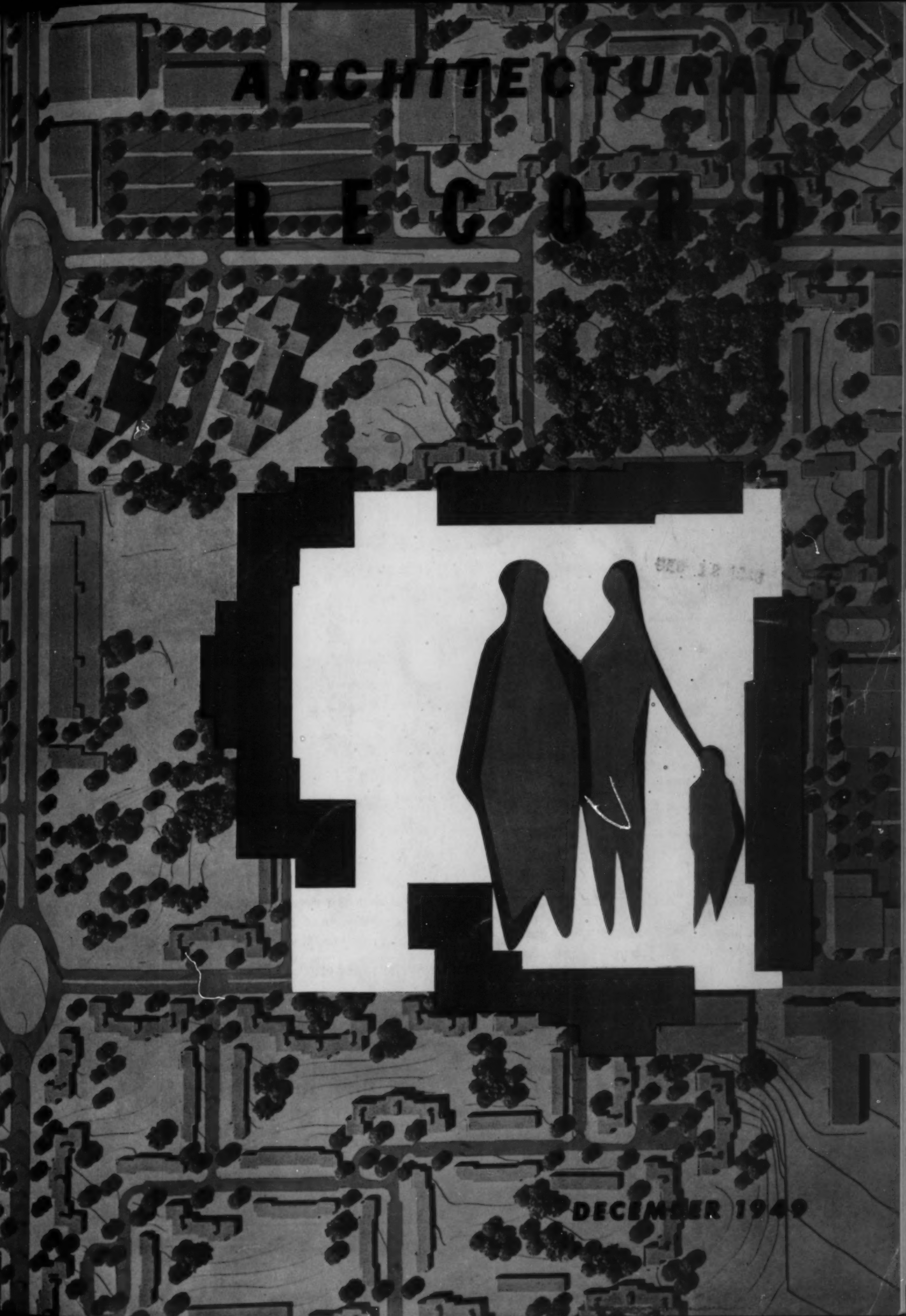
ARCHITECTURAL RECORD



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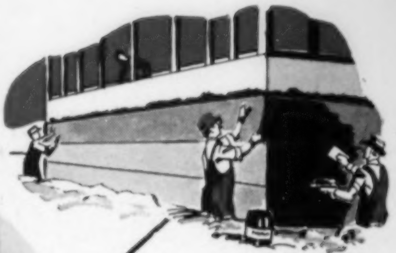

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Products for Industry

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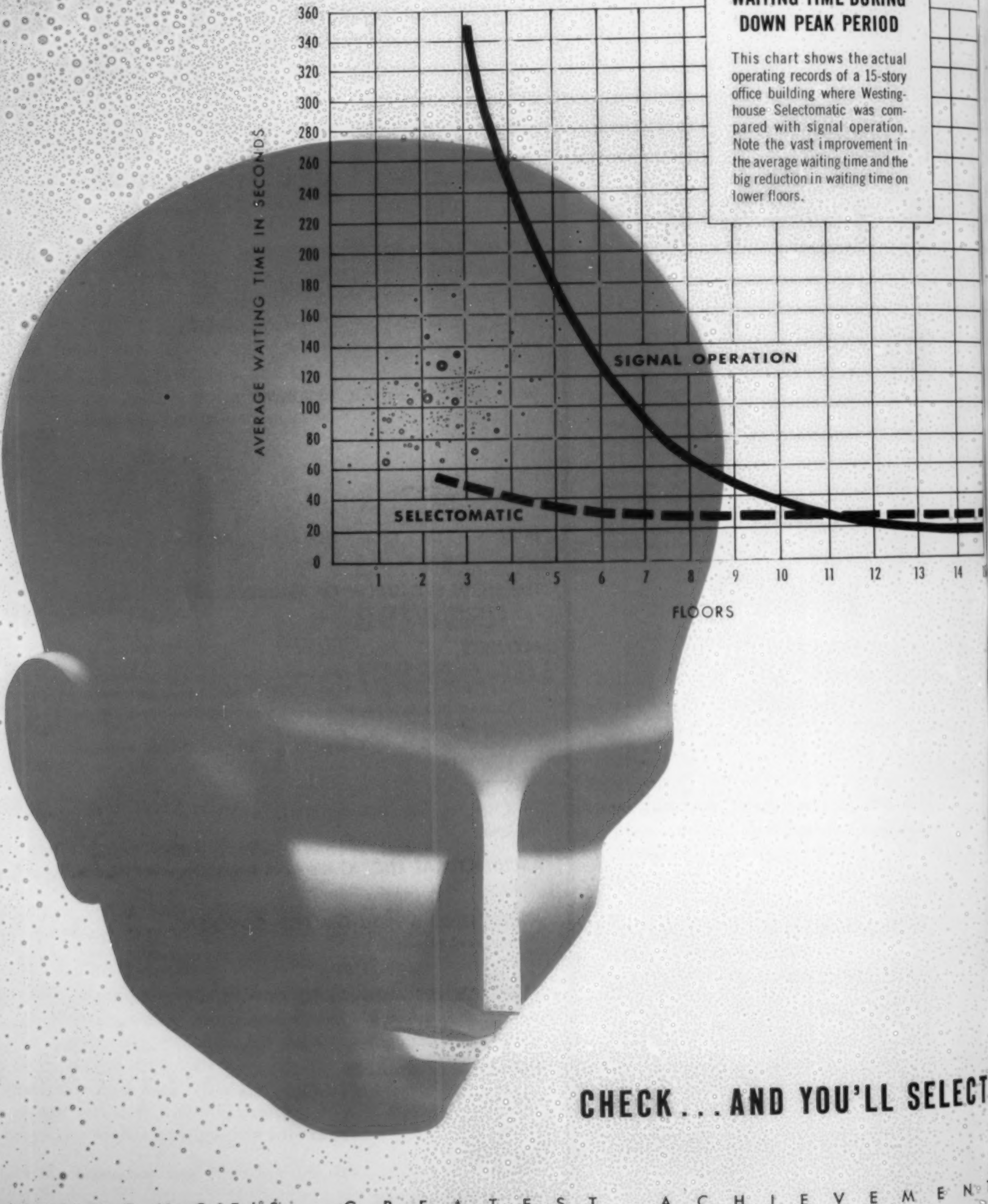
Selectomatic Elevators



WAITING TIME DURING DOWN PEAK PERIOD

This chart shows the actual operating records of a 15-story office building where Westinghouse Selectomatic was compared with signal operation. Note the vast improvement in the average waiting time and the big reduction in waiting time on lower floors.

CHECK . . . AND YOU'LL SELECT

SCIENCES GREATEST ACHIEVEMENT

THE RECORD REPORTS

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Expanding News Section Looks Over Its Sources

Opening a new phase of its long career as "the workbook of the architect-engineer," the RECORD with this issue inaugurates an expanding version of this department.

As *The Record Reports* seeks to develop in ever more useful directions for the information of its readers, a widening circle of sources will regularly become its informants.

First among these sources is the organization of the F. W. Dodge Corporation itself, whose Construction News Division is headquarters for information on construction activity through nearly 2700 daily, up-to-the-minute reports on individual projects supplied to many thousand subscribers.

Verified facts on projects in all stages are obtained direct from their originators — owners, architects, engineers, real estate and financial men, public officials and others — by the 700-man Dodge newsgathering staff in the 37 states east of the Rockies. To supplement the work of these trained reporters and to provide leads for them, the Division subscribes each year to some 2700 newspapers, including those of every county seat in the United States and every newspaper published in a town whose population is 5000 or more. Special representatives working on a part-time basis supplement staff coverage in remoter areas.

BOCA ADOPTS BASIC BUILDING CODE

Scheduled for publication early next year is the 800-page basic building code adopted at last month's Washington, D. C., meeting of the Building Officials Conference of America as the climax of four years of intensive study.

Hailed as the most significant step forward in this generation for the construction industry, the code offers to any community in the nation which may choose to adopt it an inclusive body of building regulations based, not on specifications, but on performance.

Advantages to architects and engineers, to industry, to communities, to building officials and to the general public of a single performance-type code to replace the 2500 separate and conflicting building codes now in operation have long been admitted in the building field.

Approval of this code by BOCA, while it does not bind any single community to accept the code, does indicate affirmation of this position by officials representing communities containing more than 80 per cent of U. S. population.

Prescribing standards of construction to meet functional requirements, the code sets up minimum obligatory performance standards gauged to meet inherent fire and life hazards associated with specific use and occupancy of a building.

Preparation of the code, although it

"My dear! You can't seat a pumice-aggregate man next to a stabilized vermiculite!"

—Drawn for the RECORD by Alan Dunn

was largely the work of leading figures in the construction field who volunteered their time, cost $100,000, a sum raised by the Building Officials Foundation, founded by BOCA as an affiliate.

Now another $100,000 is being sought, to meet the cost of printing the code and of the important next step, setting up testing laboratory procedure to judge performance of new materials and a central clearing-house for test data.

CALIFORNIA ARCHITECTS HOLD ANNUAL CONVENTION

Ralph Walker, president of the American Institute of Architects, was among the speakers at the 22nd annual convention of the California Council of Architects, held November 6–9 at the Desert Inn, Palm Springs, Calif., with a program of information and entertainment.

Glenn Stanton of Portland, Ore., regional A.I.A. director, also attended the convention, which featured seminars on public relations, schools and public housing.

Thomas S. Holden, president of the F. W. Dodge Corp., was the principal speaker at the first of two speakers' dinners, with Mr. Stanton making the address at the second. At a speakers' luncheon Mr. Walker was heard in a discussion "Architects Take Action."

Seminar speakers included Neal Van Sooy on public relations, with Walter Hagedohm as chairman; Dr. Charles W. Bursch and Henry Wright on schools, John Rex, chairman; Ted Criley on housing, Mr. Rex as chairman.

BUILDING UPSWING GAINS

Figures on construction volume for October showed a striking gain in momentum of the building upswing which started in August, according to the November analysis of the F. W. Dodge Corp.

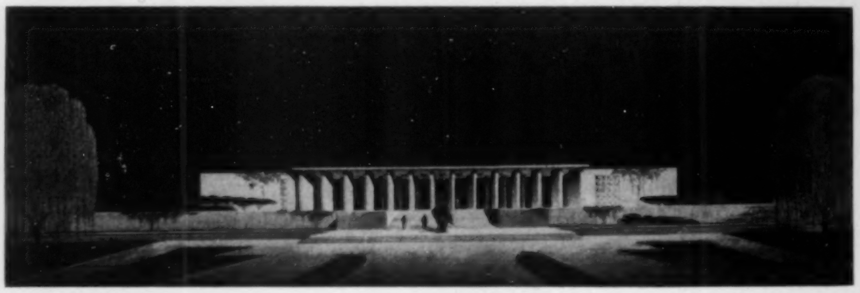
Contracts awarded in October in the 37 states east of the Rocky Mountains totaled $1,061,751,000, the third highest monthly volume in the Dodge statistical series dating back to the pre-boom days of the Twenties.

Only higher monthly volumes recorded were in June 1942 (reflecting war construction peak) and September of this year.

October's rise was reflected in all major classifications.

WAR MEMORIALS EXHIBITION

Photos below: Courtlandt V. D. Hubbard



Hombourg, France *Holabird, Root & Burgee, Architects*

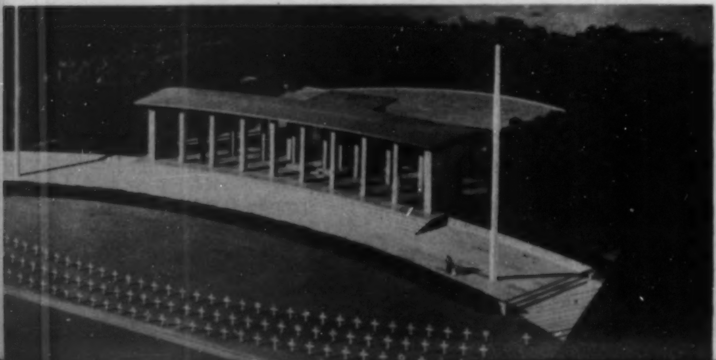
Public exhibition of models, drawings and plans of 15 American war memorials to be constructed abroad will take place Dec. 19–Jan. 6 at the Architectural League in New York, following a premiere at the Philadelphia Art Alliance.

Construction of the memorials will begin in the spring at permanent U. S. military cemeteries under the direction of the American Battle Monuments Commission, for completion in 1952.

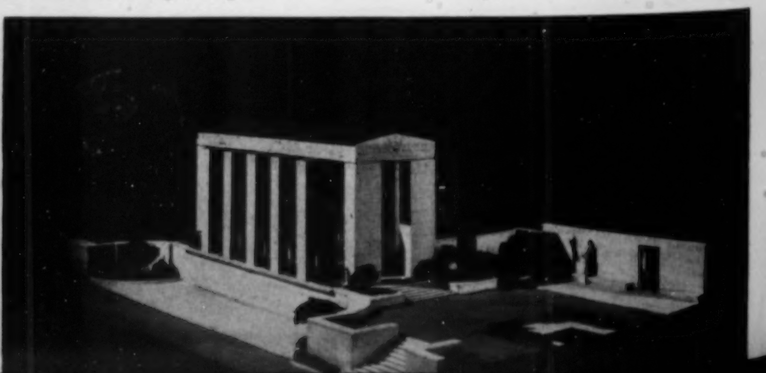
John Harbeson of the firm of Harbeson, Hough, Livingston & Larson, which designed the memorial at St. Laurent-sur-Mer, France, was the Commission's consulting architect.

Besides Harbeson's firm and those mentioned in connection with the models pictured here, architects for the memorials are: Coolidge, Shepley, Bulfinch and Abbott, Boston; Reinhard, Hofmeister and Walquist, New York; William and Geoffrey Platt, New York; Delano and Aldrich, New York; William T. Aldrich, Boston; Murphy and Locraft, Washington; Toombs and Creighton, Atlanta; McKim, Mead and White, New York; Gugler, Kimball and Husted, New York; Moore and Hutchins, New York; Gardner Dailey, San Francisco.

Hamm, Luxembourg *Voorhees, Walker, Foley & Smith, Architects*



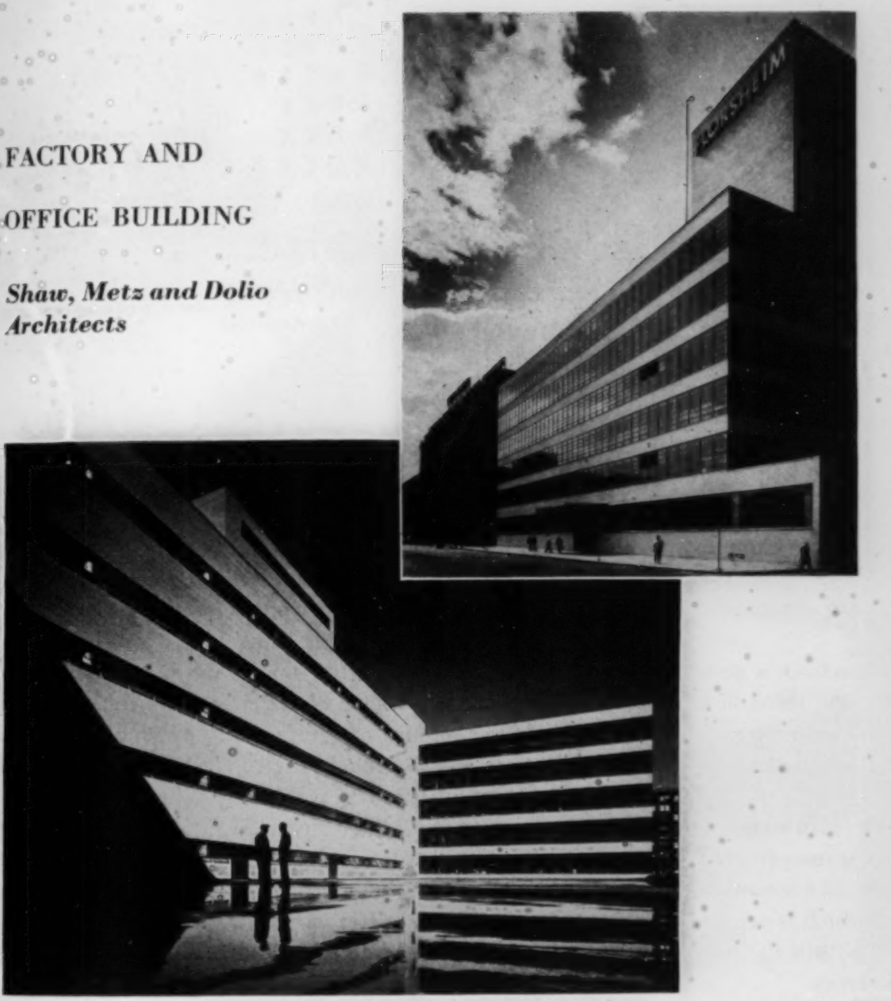
Cambridge, England *Perry, Shaw & Hepburn, Architects*



FACTORY AND OFFICE BUILDING

Shaw, Metz and Dolio
Architects

Hedrich-Blessing Photos



Sleek, clean and decidedly urban in character, the new Florsheim Shoe Co. factory and office building is located in the Chicago Loop area for convenience to transportation facilities. The exterior is of soft gray brick, banded with unbroken horizontal lines of windows which provide natural daylight on all sides of the building.

The six-story structure houses two separate factories, general offices, sample rooms, a cafeteria and a first aid department. The basement and first floor occupy the full site, while the upper floors are U-shaped in plan, with an open roof court for employee recreation, and are stepped back on the north side for light and air. A 50-ft-high tower on the roof houses sprinkler tanks and dust collectors.

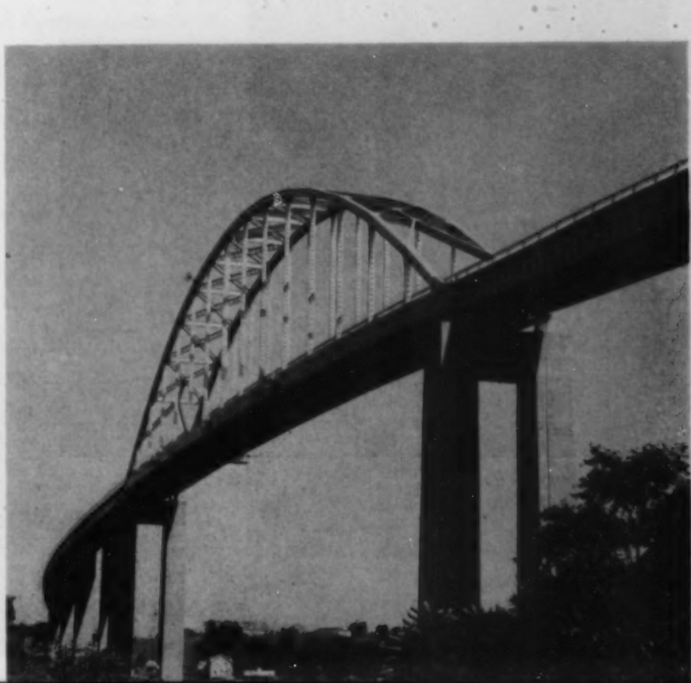
The fluorescent-lighted interiors feature cheerful colors and special mastic flooring to reduce sounds and echoes. The partitions in the office areas are of gray enameled steel and glass, and are movable. All machinery and equipment is modern and efficient. Special vertical floor to floor and overhead conveyors serve to speed up shoe production. Power units are all individually controlled. Humidifiers are placed at intervals, and a cyclone-fan-activated exhaust system is employed to carry off dust.

CHESAPEAKE CITY, MD., BRIDGE OPEN

Corps of Engineers, U. S. Army

Col. F. F. French, C.E.
Philadelphia District Engineer

Parsons, Brinckerhoff, Hall & MacDonald, Engineers



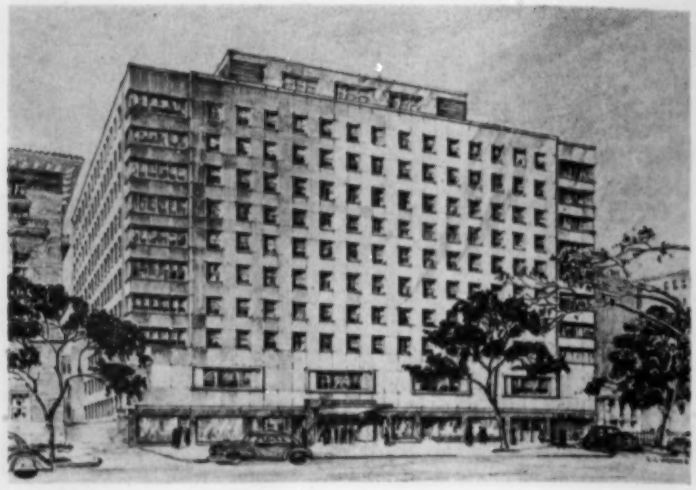
Spanning the Chesapeake and Delaware Canal at Chesapeake City, Md., the Army Engineers' new high-level fixed bridge, now open to traffic, is nearly 4000 ft long, with a 25-foot roadway plus a 4-ft sidewalk along the east side running the full length of the bridge. Main span is 540 ft long with vertical clearance 135 ft

LeRoy L. Werner, A.I.A., Architect

William A. Brown, Mechanical Engineer

Beall and LeMay, Structural Engineers

INTEGRATED PARKING FOR OFFICE BUILDING IN WASHINGTON, D. C.



Rendering by Horydczak

With a ramp-type garage as its core, the $6,500,000 office building of the Cafritz Construction Company now under construction in downtown Washington, D. C., for completion next Summer, offers a unique solution to the problem of parking.

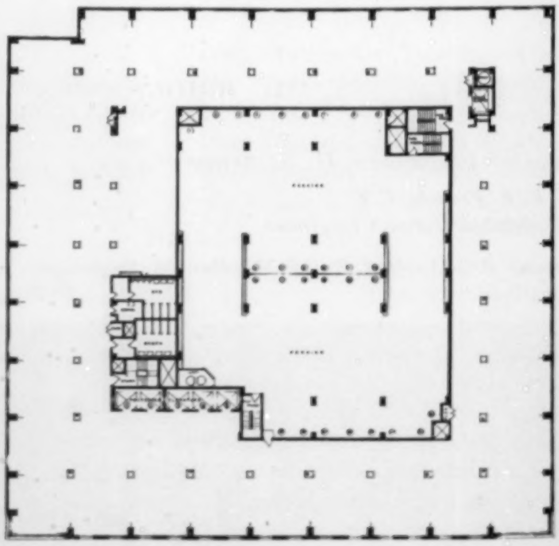
A square outer structure for offices encloses a garage structure covering 11,430 sq ft, about one third of the building's total area. Each area has its own egress facilities and the two areas are connected only by fire doors at each floor.

A series of ramps from floor to floor with maximum 15 per cent grade will lead drivers to their reserved parking spaces. There are stalls for parking 32 cars on each floor, well out of line of flowing traffic, which is expected under normal load conditions to move within the building as well as it would on a crowded street.

Swinging doors will admit the tenant from the garage space to a corridor in the office building.

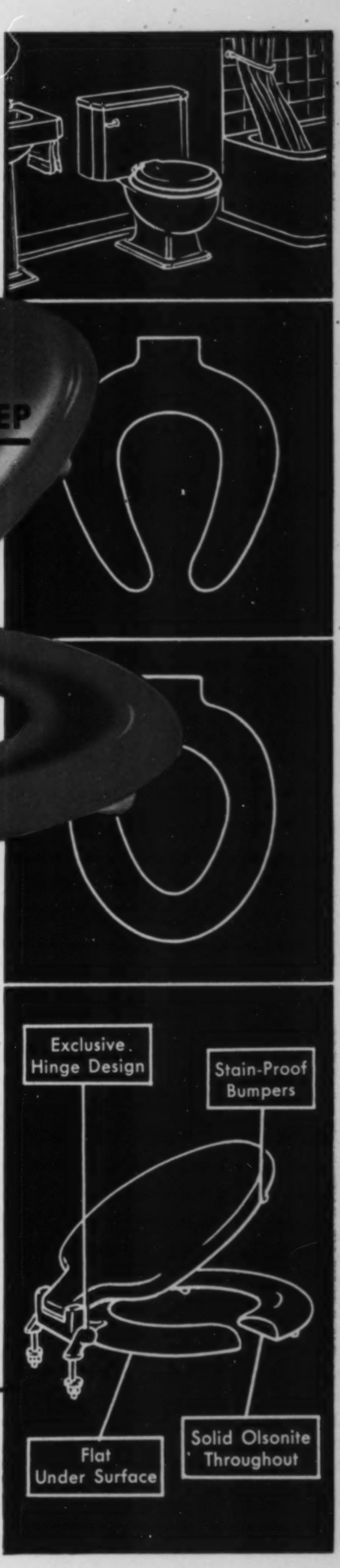
The windowless garage core will have sufficient ventilation to remove the fumes and keep the air clean. The entire structure will be air conditioned and heated by equipment on the roof. A 600-ton compressor will be set in the penthouse, with fans feeding the air down small, high-pressure conduits. This preconditioned air supply enters each floor through conditioning coils, taken from the conduits which follow the columns.

Plans provide 200,000 sq ft of rentable office and, on the ground level, 9640 sq ft of rentable store space. Construction features include fluorescent lighting throughout, underfloor electric conduits, acoustical ceilings, aluminum doublehung windows, high-speed signal-controlled elevators and complete fireproofing.



Beauty

THAT'S MORE THAN SKIN DEEP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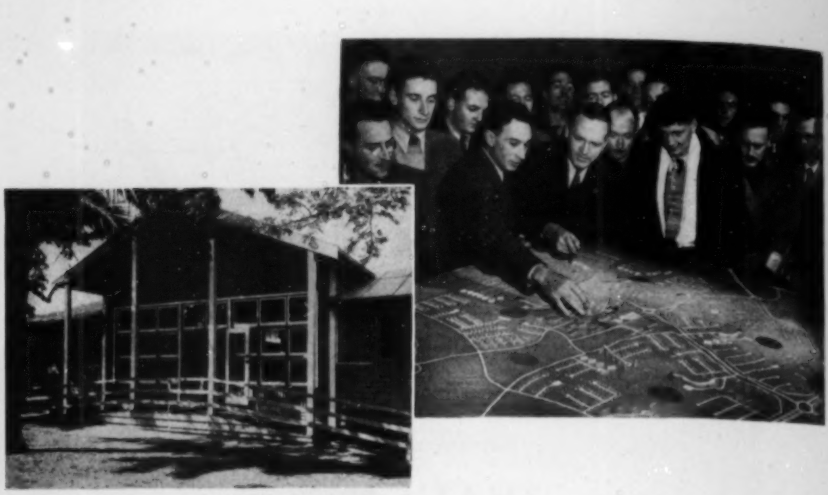
THE RECORD REPORTS

AUSTRALIAN STUDENTS SEE THEIR PROJECTS BUILT

Practice goes hand in hand with theory at Melbourne University, Australia, where architecture students have designed a house, a community center, a hostel and other buildings for actual erection. They designed entrance (right) for school's temporary quarters; now replan Melbourne suburb (far right: preliminary).

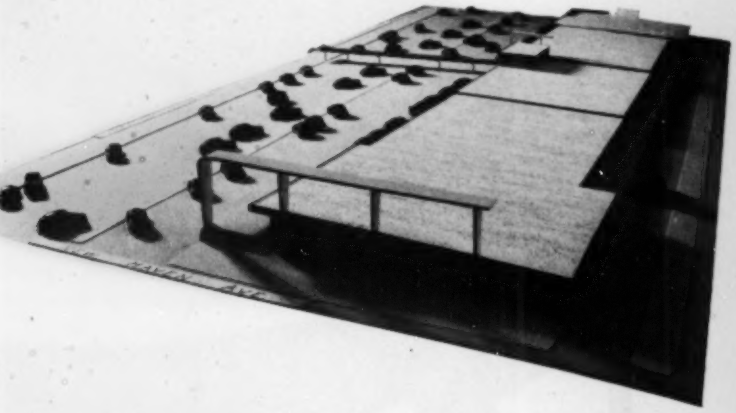


Australian Official Photos by Jack Gallagher

SHOPPING CENTER, TULSA, OKLA.

David R. Graham, Designer

Donald McCormick, A.I.A., Consultant



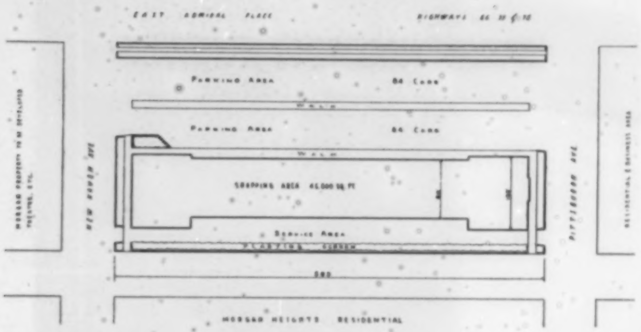


Plate glass sections and door openings between all stores to attract trade from unit to unit are featured in plans for this projected regional shopping center. Adjoining a 46,000-sq-ft building of insulated metal panels on a steel structure will be some 100,000 ft of parking space (see model). Chilled water supplied from a central plant on a metered basis will provide air conditioning. Roy L. Morgan is owner and builder.

WASHINGTON NEWS *by Ernest Mickel*

In Washington last month, President Truman approved the first loan and annual contribution under the new housing program. This will authorize reactivation of a 508-unit project delayed by the war, in a contract between the Boston, Mass., Housing Authority and Public Housing Administrator. A $6,078,600 loan, 90 per cent of estimated total cost, is authorized.

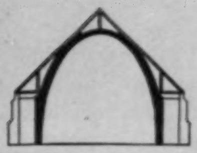
Following the adjournment of Congress, other federal programs meaning more construction were advancing at administrative levels with industry and government confident of a continued high building rate. Based on a surprising contra-seasonal construction upswing, the National Association of Home Builders said it might be the biggest building year to date. However, postponement of final debate on the home financing bill until the next Congressional session meant that inability to make long-range plans will continue to plague the industry.

Warren Jay Vinton, newly named as assistant commissioner by PHA Chief John Taylor Egan, has indicated PHA will strive to fulfill its program to the maximum of the 810,000 units authorized by Congress. Efforts will be made to reach this total though no requirement was made by Congress. Early applications showed clearly a demand for more units than are authorized. PHA, as a result, has had to trim requests so that nearly all applicants may receive some aid.

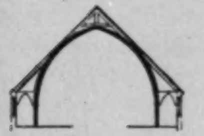
The slum clearance and urban redevelopment phase was developing more slowly with the expanded Housing and Home Finance Agency having trouble finding office space and new personnel under its new program.

So-called military housing, however, was shaping up rapidly as a separate program. Through October 21, FHA

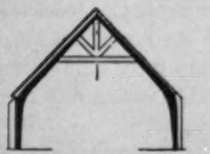
(Continued on page 16)



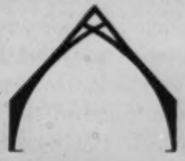
Elliptical shape is highly efficient structurally, as well as unusual and effective architecturally.



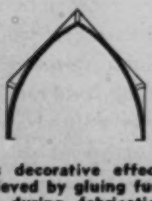
Gothic Frame
Simple "UNIT" arch clear of wall structure, leaving space for aisles.



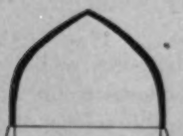
Straight top lines of this variation permit greatest economy in roof construction by providing direct seat for purlins.



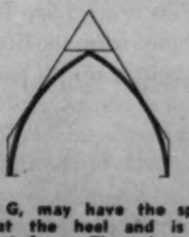
Scissors truss effect of Type G arch completely fabricated in factory is far more stable than bolted truss.



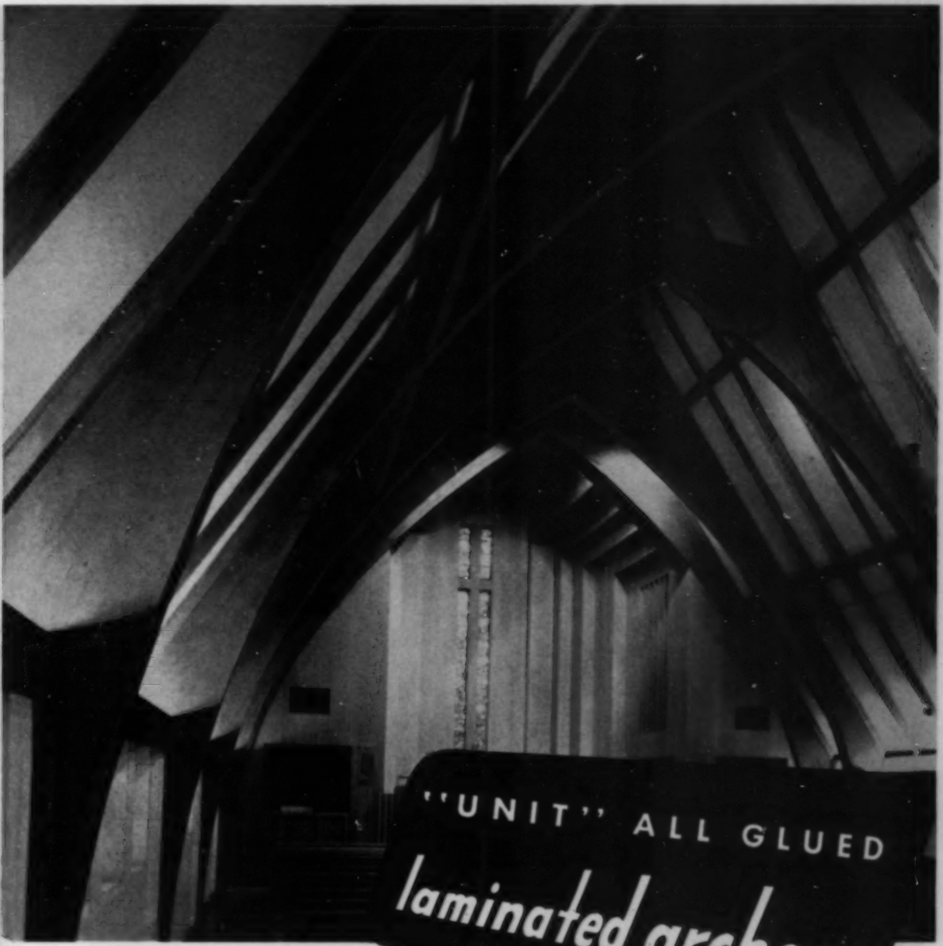
Various decorative effects may be achieved by gluing functional section during fabrication.



Type G with spring line up near eaves level provides maximum clearance.



TYPE G, may have the spring line at the heel and is the simplest form. Tie rod at heel is usual practice. Buttress may be used instead.



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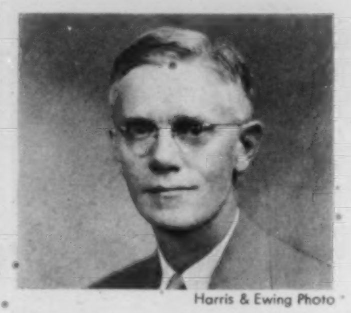
REPRESENTATIVES IN ALL PRINCIPAL CITIES

(*Continued from page 14*)



Harris & Ewing Photo

Blackstone Studios

BRAB director, William H. Scheick (left), and F. Stuart Fitzpatrick, of BRAB's fund solicitation sponsor, the U. S. Chamber of Commerce

field offices had received applications for 2355 rental housing units involving 11 projects. But hundreds are in the discussion stage.

Before Congress left Washington, it authorized a 100 per cent increase in the non-federal hospital construction program but failed to appropriate more funds, leaving the U. S. Public Health Service to plan the expansion in anticipation of extra money early in 1950. Private architects are drawing plans for projects to be erected under the Hospital Construction Act. Their work in this field will be much increased although not doubled. Important to architects is the concurrent Congressional decision to extend the life of the hospital building program three more years, continuing the Hill-Burton Act through June 30, 1955.

Effects of the strikes in coal and steel left hospitals and the heavier building construction free from the handicaps imposed on smaller projects. Because most steel orders had been placed in the spring and deliveries already made to carry these larger projects through till the normal season, it was fortunate that the shutdowns came in the fall. Most noticeable effects last month were delayed deliveries of reinforcing bars as a result of the federal order curtailing rail transportation in an effort to save coal.

Other future construction activity in the government field will involve a greatly expanded Atomic Energy Commission building program. With $30 million in reserve funds as a starter, AEC plans to spend 10 times that amount in construction of manufacturing facilities and expansion of TVA power facilities for the Oak Ridge project.

On the labor scene, all but a few of the local jurisdictional troubles over work assignments will be handled on their own merits, and for the individual situation only, by the rejuvenated National Board for Settlement of Jurisdictional Disputes. This is according to new regulations adopted when the Board was reorganized about a month ago. A minimum number of disputes, it is expected, will come under consideration for national application of the ruling. Under new rules the disputes can be appealed for decisions having industry-wide effect, but the great majority will be settled in the local sphere only. Overall effect will

(*Continued on page 18*)

Feralun Safety Treads installed in 1923, in office of RCA Victor Division, Camden, N. J. (Courtesy Public Relations Department, RCA Victor).

FERALUN
SAFETY TREADS

"INSTALLED IN *1923*... STILL GIVING SATISFACTORY SERVICE TODAY"

They planned well for safety and for durability—those who were responsible for these Feralun* safety treads—installed when this RCA Victor building was erected in 1923. A quarter century of resistance to wear under the many thousands of feet that have gone up and down them since Calvin Coolidge first entered the White House! A quarter century of underfoot safety, too, on Feralun's non-slip surface! And, as the photograph shows, these same treads can still be counted on for many more years of maintenance-free service—and safety.

Examples like this show why architects, engineers and builders insist on "Feralun"® treads, nosings and plates. Made of cast iron with wear-resistant abrasive particles embedded in walking surfaces, "Feralun" provides a sure-footed "grip" that keeps feet from slipping—and wears and wears. The coupon below will bring you full information on "Feralun." Send it today.

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Aluminum—(Alumalun), *and Nickel Bronze*—(Nicalun).®

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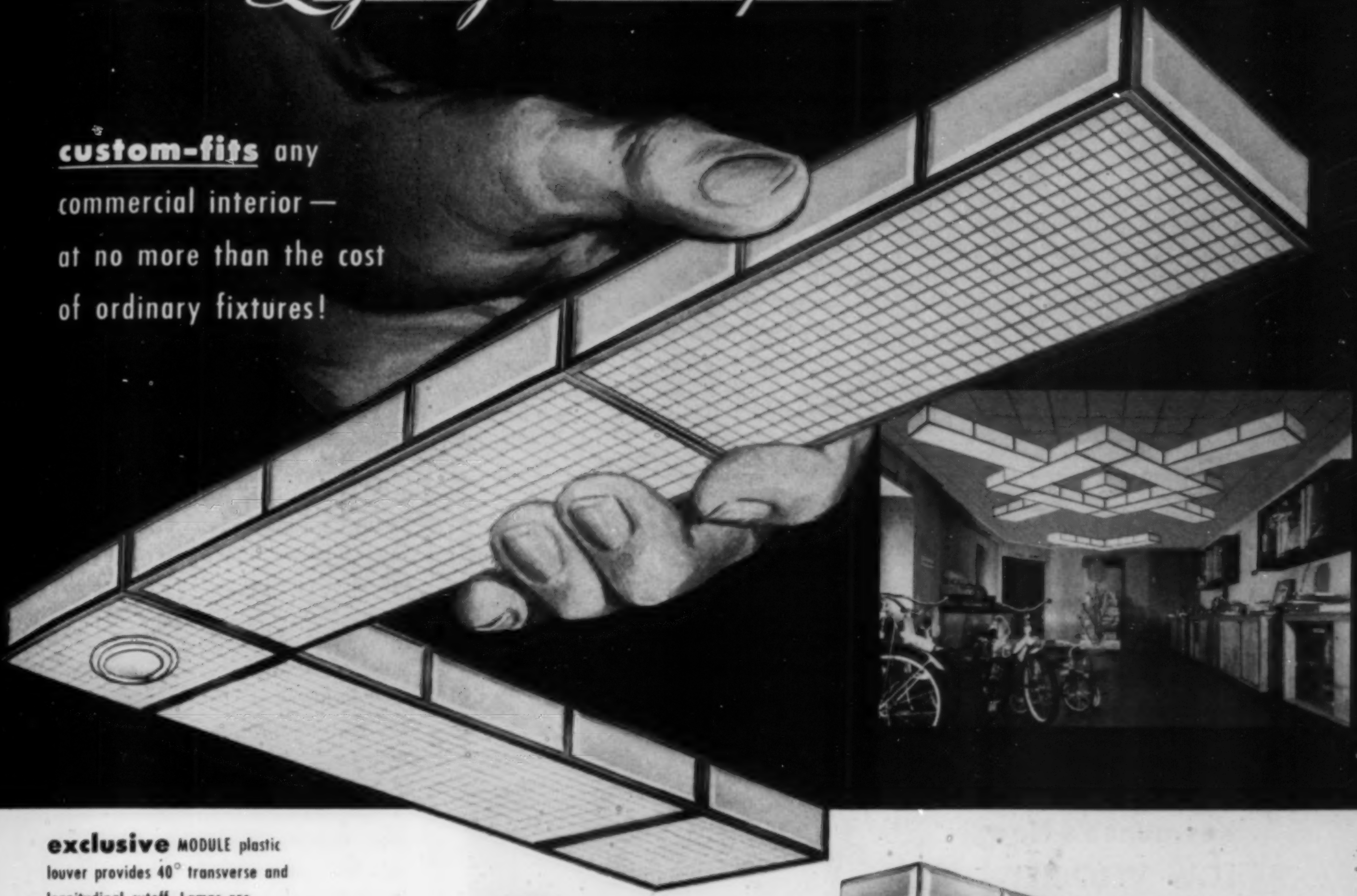
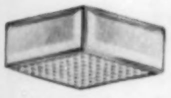
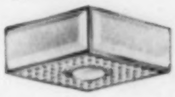


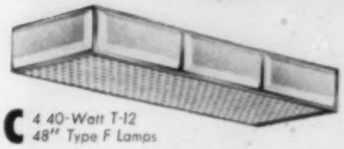
exclusive MODULE plastic louver provides 40° transverse and longitudinal cutoff. Lamps are shielded at all normal viewing angles, yet light transmission is maximum.



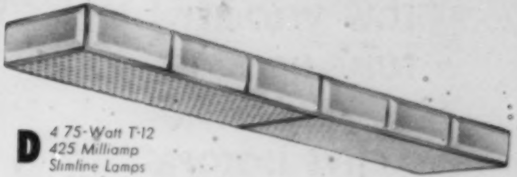
A 4 14-Watt T-12 15" Type F Lamps



B 32-Watt 12" Circline Lamp, and 1 PAR Spot or Flood Lamp



C 4 40-Watt T-12 48" Type F Lamps



D 4 75-Watt T-12 425 Milliamp Slimline Lamps

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THE RECORD REPORTS

(Continued from page 16)

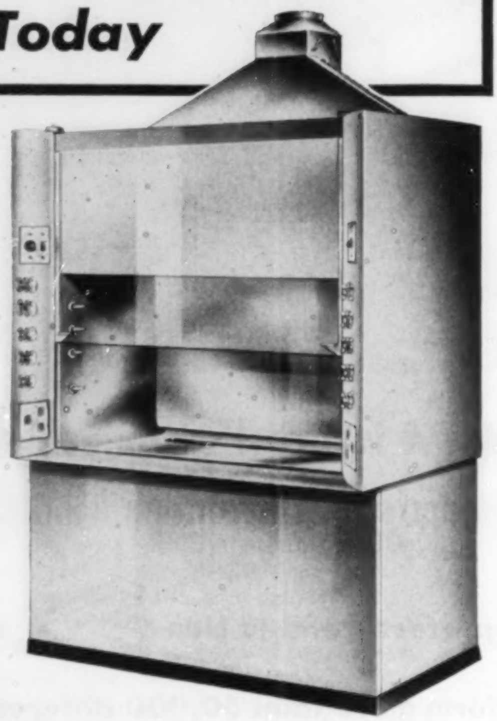
be to prevent work stoppages pending Board action.

Shorts

- The National Defense Department has asked its contractors to place subcontracts on military orders with firms in distressed areas. This is a further step in cooperating with the President's program relieving unemployment in regions where it has reached 12 per cent or more of the total labor force. On September 1 there were 35 such areas. Government is trying a new policy of awarding contracts to firms in distressed areas if the local bids are as low as any other bid from other areas. The Munitions Board now can place negotiated contracts in these high unemployment localities if they are of advantage to government.
- Lustron Corporation, the Columbus, Ohio, manufacturer of enamel and steel houses, is capturing more and more headlines in its fiscal tribulations with the Reconstruction Finance Corporation. In and out of Congress a number of times, the RFC loans to Lustron (now up to $37.5 million) may be aired again shortly after the first of the year. Rep. Albert Cole (Rep.-Kan.) has demanded a new congressional investigation. He has asked for a special committee to probe for "political intrigue" in the Lustron dealings with the federal lending agency. He said he wants to put his finger on the exact authority within RFC responsible for loaning Lustron so many millions when its president, Carl G. Standlund, put up only $1000 of his own money.
- The State of Connecticut announced its own government program for sales housing combining construction loans to individuals at 1½ per cent. This supplements a rental housing program effected by Connecticut earlier. Passed in July and approved by a special session of the legislature in mid-October, the sales housing effort will result in construction of 4000 housing units for moderate-income families, costing for the most part under $10,000 each. A $40 million appropriation finances the state plan. One feature is a charge of $50 per house as insurance premium guaranteeing against non-sale of the unit within 120 days after completion. If the state takes over the property, it does so at 90 per cent of the FHA valuation. The homes will be built with FHA assistance. Wisconsin, California and Massachusetts have housing programs of their own for veterans and New Jersey is proposing a plan, subject to a referendum.
- The recent report of Philip Murray to his Congress of Industrial Organizations promises a revival of the C.I.O. plan for building industrial homes in the nation's unused aircraft factories. Labeled "Planes for Peace . . . Homes for People . . . Jobs for Security," the suggestion was laid before Congress and the President earlier this year. In brief, it contemplates using 21 million sq ft of floor space in these idle factories for mass production of high-quality, low-cost fabricated housing, visualizing output of two million new homes a year. Murray's report holds that 50 per cent of American families are presently out of the housing market entirely because of limited incomes.

(News continued on page 20)

The FUME HOOD of the FUTURE . .
is Yours Today



Kewaunee's New LOW VELOCITY FUME HOOD for Handling RADIO-ACTIVE ISOTOPES

Design Approved for Use by the OAK RIDGE INSTITUTE of NUCLEAR STUDIES

No. 3600—Kewaunee's "FUME HOOD of the FUTURE"

The Hood is made with stainless steel interiors and ducts throughout and incorporates a stainless steel working surface and trough. The working surface will support a load of 4,000 pounds. The Hood incorporates a new system of airfoils, baffles and ducts which provides a uniform flow of air over the entire face of the Hood, thus assuring evacuation of gases at extremely low velocities without interference from reverse eddies or turbulence. No auxiliary duplicate duct system for incoming air is required.

Write for Descriptive Literature and Drawings available now on Kewaunee No. 3600—"The Fume Hood of the Future"

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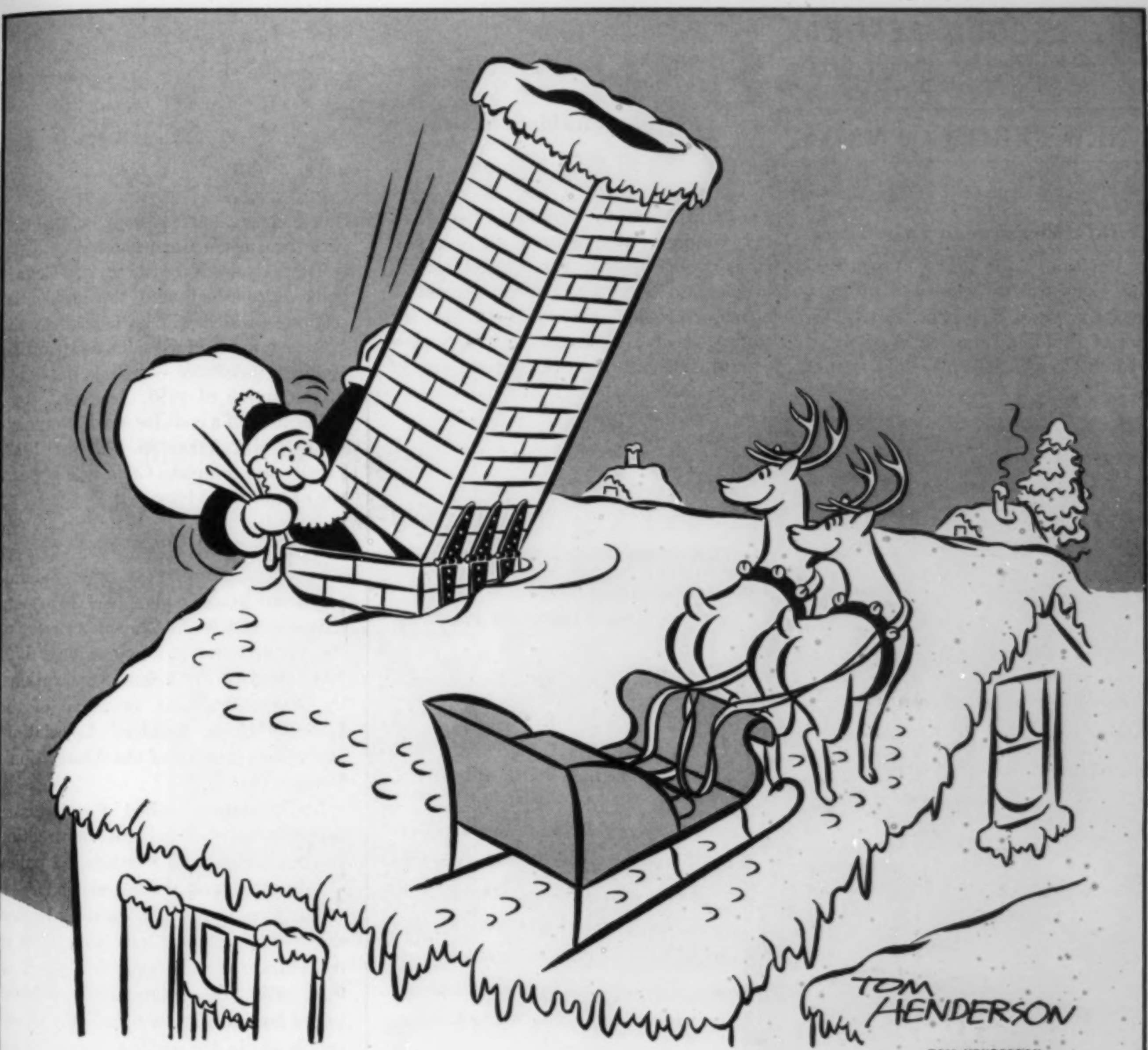

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NEWS FROM CANADA

By John Caulfield Smith

N.B.C. Revision to Take Time

Revision of the 1941 National Building Code will be completed within the next five years, Robert F. Legget, Director of Building Research, National Research Council, recently told members of the Toronto Builders' Exchange.

Modernization of the Code is a complex undertaking, Mr. Legget stated. Climatic variations alone present a major problem and because of this the process of amendment is a very slow and difficult task. All changes are, of course, being instituted in cooperation with the construction industry.

The framework for the revised Code is being established, and the residential section — which will be helpful to the extensive areas of Canada now lacking technical assistance — will be published in the spring of 1950. The next step, publication of a code for smaller municipalities, will follow in 1951 or 1952. Finally the complete Code will appear, one or two years later.

Housing Plan Commended

Satisfaction with the new federal-provincial housing plan (see "Housing Subsidies Get Nod," November issue of the ARCHITECTURAL RECORD, page 176) was expressed, with some reservations, by George Prudham, president of the National Home Builders' Association, at a recent meeting of the Association's Toronto branch.

Mr. Prudham called for industry support of research in home construction and equipment, and a broadened policy of education and public relations. "If the builders want to retain their leadership," he warned, "they will have to concentrate for the next few years at least on large scale production of lower priced houses. The vast majority of our people are in the lower and middle income brackets and they control the policy of this country by their votes."

Ontario Plumbing Code Okayed

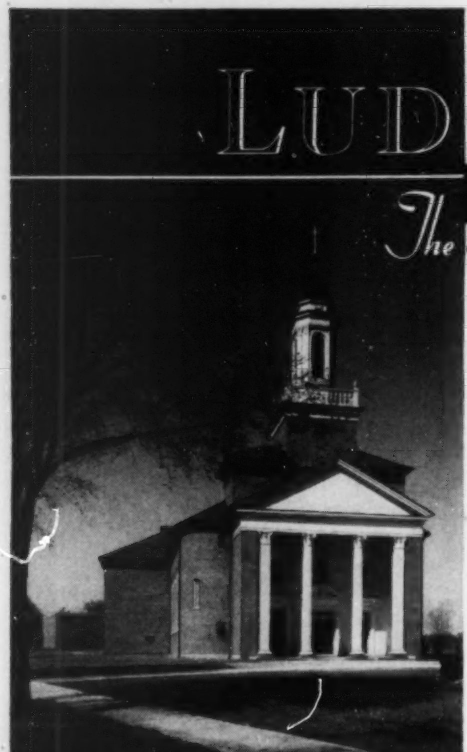
The provincial cabinet has approved, in principle, a plumbing code for Ontario. Approval followed presentation of a draft code by representatives of associations interested in its adoption.

Up till now no two municipalities have had the same plumbing regulations. The new code, which is the minimum type, supersedes existing local codes and automatically covers municipalities hitherto without codes.

Cabinet approval marks the hurtling of the last big obstacle in the path of uniformity and coordination. The next move is up to the province's legal department. It must put the draft code into a form which will make it enforceable under the Public Health Act. It then

(Continued on page 22)

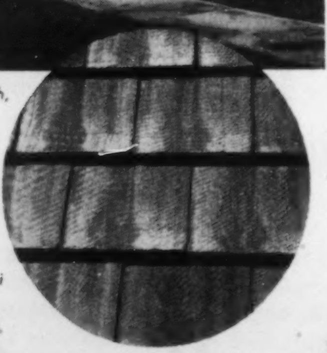
LUDOWICI
ROOFING TILE
The outstanding name in roofing



The classical beauty of this Colonial-Georgian church, dignified by its spatial setting conforms to the traditional in a significant modern way with a Ludowici roof of Shale Tile.

Here, the architect has achieved in texture and color a true reproduction of the early colonial "shakes". The soft grays and greens and the weathered surface are simulated with remarkable fidelity in the enduring quality of "Williamsburg" Interlocking Tile by Ludowici.

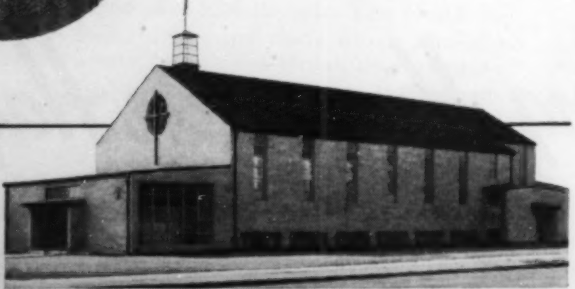
St. Dominic Church, Cleveland, Ohio
Wm. Koehl & Thos. F. Koehl, Architects.



Detail of Ludowici "Williamsburg" Interlocking Shale Shingle Tile.

Modern churches too, as shown below, use roofs of Shale Tile to complement the architectural concept with attractive permanence.

Ludowici offers architects assistance in the preparation of plans and specifications and will gladly submit samples upon request.



St. Joan of Arc Church, Minneapolis, Minn.
Architects: Hills Gilbertson & Hayes

We also invite your consideration of Ludowici Shale Slabs; a beautiful quarry tile for floor and walls.

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(*Continued from page 20*)

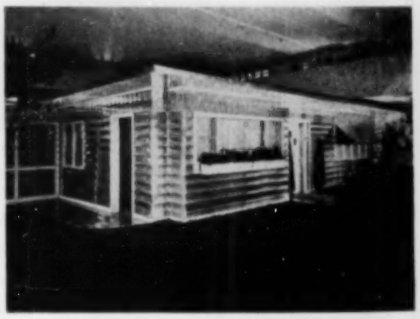
becomes law without the necessity of passing separate legislation.

S. S. Van Raalte represented the Ontario Association of Architects during the preparation of the draft code.

September Cancels August Slip

Construction contracts awarded in September totalled $103 million or $23 million more than those awarded in September, 1948. This reverses the downward trend noted in August.

Maclean Building Reports, authority for these figures, gives total construction contracts for the first nine months of the year as $812 million, an increase of $67 million — nine per cent — over the same period a year ago. Comment is made that "With three months still to go in the year, and assuming volume in that period to be at least equal to that of last year, it is assured that contracts will exceed $1000 million for the first time since the inception of these statistics in 1913." Last year's total was $954 million.



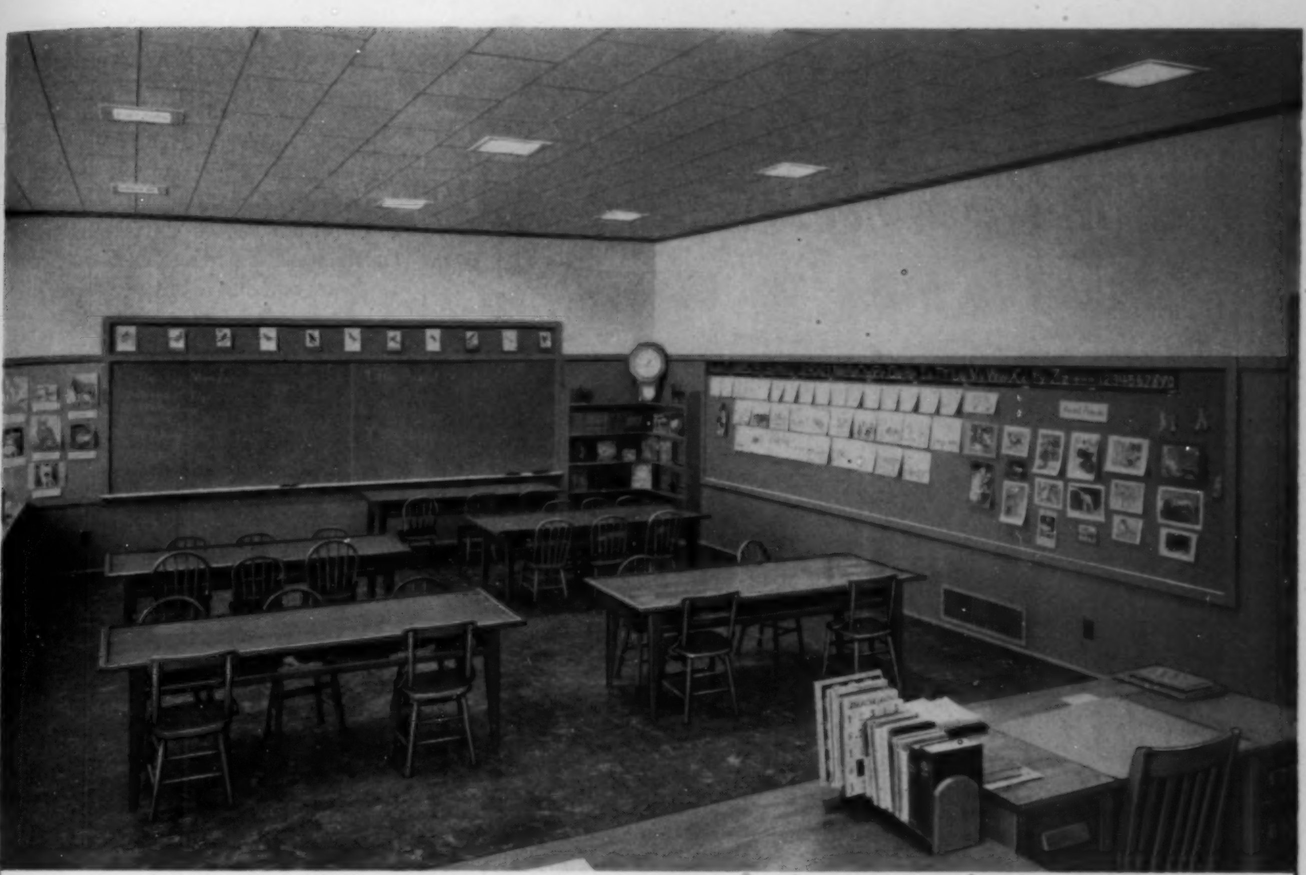
Pre-engineered aluminum house developed by Cresswell Pomeroy Ltd., of Montreal, for export to South America and Africa

House Building Tops Capacity?

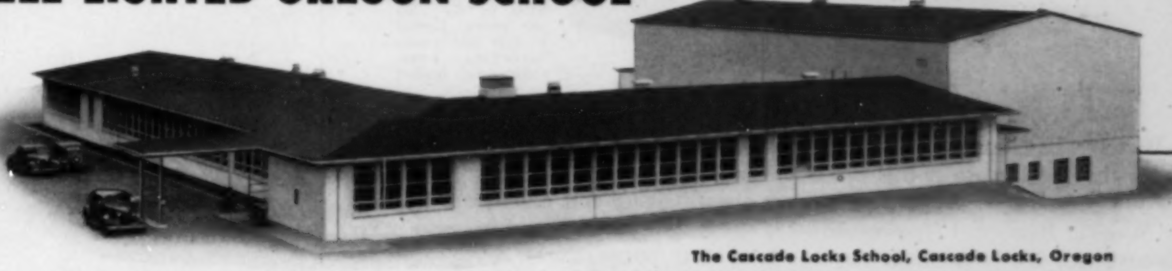
The average time required to construct dwellings completed in July was 7.3 months compared with 6.1 months in July, 1948, according to the Dominion Bureau of Statistics. This poses the question: is the Canadian residential building industry trying to put up more houses than its productive capacity efficiently permits? The extension in completion time infers that it is.

The number of new dwelling units started during the first seven months totalled 49,285. During the same period

(*Continued on page 24*)



Readin' and 'Riting ARE EASIER IN THIS WELL-LIGHTED OREGON SCHOOL



The Cascade Locks School, Cascade Locks, Oregon

Architects & Engineers: Annand & Kennedy — Portland, Oregon.
Electrical Engineer: Ray W. Preston.
Lighting Equipment: Litecontrol No. 12F-V30S, recessed fixtures with Holophane CONTROLENS* and square glass prismatic Holophane reflector.
Fixtures per Classroom: 9 in work area, plus 2 in play area at rear.
Lamps: 300 watts per fixture.
Watts per square foot: 5.4.
Footcandles: 33 (average) on desktops.
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They came to see Webster Baseboard Heating at this open house . . . and stayed to live

Mayfair Apts., Aberdeen, S. D., one of ten identical apartment buildings featuring Webster Baseboard Heating. Built by The Acme Company, Sheldon F. Reese, President. Architect: U. L. Freed. Plumbing and Heating: Tri-City Plumbing & Heating Company. Mortgagee: Midland National Life Insurance Company. FHA approved. Commitment was $1,000-000 or $1,753 per room. Rental is $19 per room, including heat, water and janitor service.

Webster Baseboard Heating was a hit of the open house at this modern apartment village in Aberdeen, S. D.

"Webster Baseboard Heating shared honors with the all-electric kitchens for the widest interest and greatest approval," says Sheldon F. Reese, president of The Acme Company, project owners. "It was one of the big selling points."

Clean heat

Webster Baseboard Heating is perfected hot water heating installed behind a specially-designed metal baseboard around the exposed walls. *Less than 2 degrees variation* between floor and ceiling.

Webster Baseboard Heating is *clean* heat, *convected* heat . . . *radiant* heat in its most practical form. Heating is always gentle and mild yet fully adequate to provide comfort even with sub-zero temperatures.

More economical heat

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Whether it is heating for an individual residence or for a project like Mayfair Apartments, get the facts about Webster Baseboard Heating. Now in operation in more than 10,000 homes. Webster Baseboard Heating is a development of Warren Webster & Company, an organization with more than 60 years leadership in heating.

Write for booklet, "Questions and Answers about Webster Baseboard Heating." Address Department AR-12, Warren Webster & Company, Camden 5, N. J.

Webster
BASEBOARD HEATING

THE RECORD REPORTS

(*Continued from page 22*)

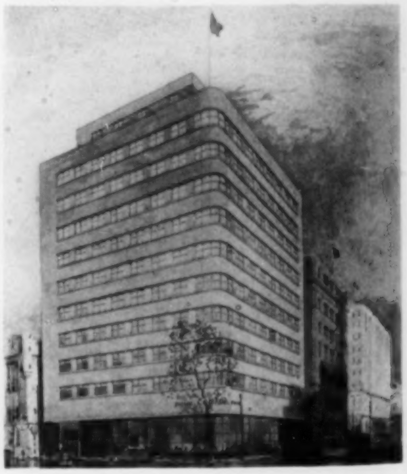
in U. S. the Bureau of Labor Statistics reports that 549,100 starts were made. On the basis of population, Canada and U. S. are running about neck and neck in housing output.

Newfoundlanders Given Welcome

The Royal Architectural Institute of Canada has pledged support to the architects of Newfoundland in their application for a charter. When organized, the professional association in Canada's newest province will become a component society of the R.A.I.C.

Montreal Postal Station

Construction of an office building in Montreal to accommodate Postal Station "B" is scheduled by the Department of Public Works, Ottawa. The structure will be approximately 94 by 87 sq ft and will contain 10 stories and basement with sub-basement. It will have a reinforced concrete foundation, structural steel framing with reinforced concrete and lightweight concrete floors, domestic limestone and domestic granite walls and base and marble for the public lobby. The building will also contain three high-speed elevators.



Post Office and Office Building

Architects for the project are Archibald, Illsley and Templeton. Kearns and Bromley are consulting mechanical engineers and Brouillet and Carmel, consulting structural engineers.

(*News continued on page 150*)

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CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corporation, from data compiled by E. H. Boeckh & Associates, Inc.

	NEW YORK					ATLANTA				
	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings		Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
Period	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1941	134.5	135.1	135.1	137.2	134.5	97.5	96.1	99.9	101.4	100.8
1942	139.1	140.7	137.9	139.3	137.1	102.8	102.5	104.4	104.9	105.1
1943	142.5	144.5	140.2	141.7	139.0	109.2	109.8	108.5	108.1	108.7
1944	153.1	154.3	149.6	152.6	149.6	123.2	124.5	117.3	117.2	118.2
1945	160.5	161.7	156.3	158.0	155.4	132.1	133.9	123.2	122.8	123.3
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
July 1949	236.6	232.9	240.4	243.9	237.0	183.6	183.5	177.5	178.0	174.3
Aug. 1949	237.3	233.8	240.5	244.0	237.2	182.6	182.2	177.3	177.9	174.1
Sept. 1949	239.2	236.3	240.6	244.0	237.5	183.7	183.7	178.4	178.4	174.8
	% increase over 1939					% increase over 1939				
Sept. 1949	**93.7**	**93.1**	**84.1**	**82.9**	**82.6**	**112.9**	**121.1**	**87.6**	**83.2**	**84.6**

	ST. LOUIS					SAN FRANCISCO				
1925	118.6	118.4	116.3	118.1	114.4	91.0	86.5	99.5	102.1	98.0
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1941	118.8	118.0	121.2	121.7	122.2	116.3	112.9	120.5	123.4	124.3
1942	124.5	123.3	126.9	128.6	126.9	123.6	120.1	127.5	129.3	130.8
1943	128.2	126.4	131.2	133.3	130.3	131.3	127.7	133.2	136.6	136.3
1944	138.4	138.4	135.7	136.7	136.6	139.4	137.1	139.4	142.0	142.4
1945	152.8	152.3	146.2	148.5	145.6	146.2	144.3	144.5	146.8	147.9
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
July 1949	215.9	214.5	210.3	212.3	211.2	206.7	199.3	211.4	218.5	214.2
Aug. 1949	215.9	214.5	210.3	212.3	211.2	207.1	199.5	212.0	219.3	214.8
Sept. 1949	218.2	216.2	212.9	216.2	214.4	208.4	200.8	213.6	218.9	214.4
	% increase over 1939					% increase over 1939				
Sept. 1949	**98.0**	**102.1**	**79.4**	**80.5**	**80.2**	**97.3**	**102.2**	**81.9**	**79.6**	**84.0**

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

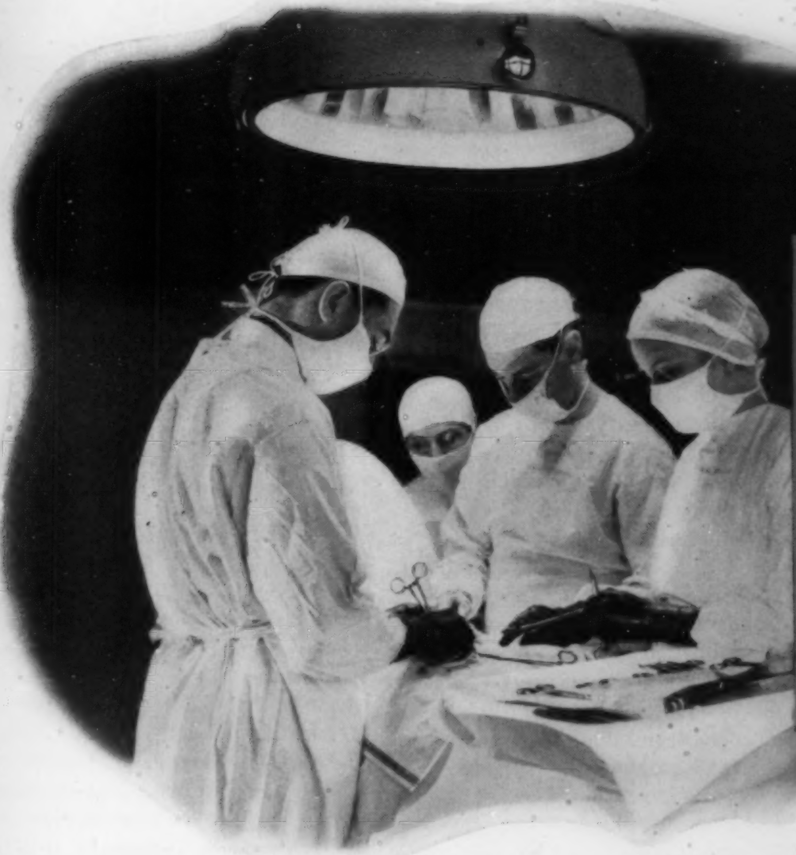
Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.



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REQUIRED READING

SCHOOL ESSENTIALS

Planning Secondary School Buildings. By N. L. Engelhardt, N. L. Engelhardt, Jr., and Stanton Leggett. Reinhold Publishing Corporation (330 West 42nd Street, New York 18, N. Y.), 1949. 252 pp. 8¾ by 11½ in. $10.00.

Because it is written by a school planning consultant, this book emphasizes school requirements and educational philosophy rather than actual design. It includes an abundance of survey material gathered by the elder Dr. Engelhardt during his long experience as classroom teacher, professor at Columbia Teachers College, and Associate Superintendent of the New York City Public Schools, and by his associates, Dr. N. L. Engelhardt, Jr. and Dr. Stanton Leggett. There are no photographs of finished projects, and the great value of this study to the architect is its interpretation of accepted modern educational theory as related to the planning of buildings and grounds.

One section, dealing specifically with "The Changing Curriculum," translates such professional patois as "core curriculum," "fusion of subject matter," "the emergent nature of the curriculum" and "the broad concept of guidance," but such abstract discussion is not typical of this practical study. Until 1900, the authors remind us, the high school was intended to prepare a few highly selected young people for the liberal arts colleges. With an increasing number of students continuing their education beyond the eighth grade, the program has been expanded to include commercial and industrial courses for those who desire them, as well as fine arts, physical education, student clubs, and guidance programs for all. Planning a building to house this extravaganza — and it must often double as a community center after school hours — is no task to be entered upon lightly.

Locating the building is included as an early step in school planning, and the site planning chapter provides a realistic discussion of shifting populations and the need for placing schools by overall community planning. It cautions against use of old sites for new buildings, and demonstrates the importance of traffic conditions, landscape possibilities, and soil conditions as factors to be considered in choosing new sites. Checklists of specific considerations provide quick reference material.

The discussion of the building itself is also well documented with charts, suggested equipment layouts, and checklists, and a table of suggested interior materials is given for each type of classroom and each special department of the school. A section on building and site services has useful suggestions on building maintenance; heating, lighting, and other technical installations. A comprehensive bibliography of school planning studies is also included.

RELIGIOUS SCHOOL ROOMS

The Church School and Parish House Building. By Elbert M. Conover. The International Council of Religious Education (203 N. Wabash Avenue, Chicago, Ill.), and The Interdenominational Bureau of Architecture (300 Fourth Avenue, New York 10, N. Y.), 1949. 6 by 9¼ in., 96 pp., illus. $1.50.

This pamphlet is intended to help ministers and church committees in planning new facilities and re-planning old buildings, from the organization of building programs for various types of churches to the selection of teaching and worship equipment. It emphasizes the importance of consultation between architect and church school leaders, and should be useful in clarifying to the architect the needs of his clients. A building checklist and a bibliography are included.

CHURCH COLLECTION

Planning Church Buildings. Edited by Elbert M. Conover. Interdenominational Bureau of Architecture (300 Fourth Avenue, New York 10, N. Y.), 1949. 9½ by 12 in., 64 pp., illus. $2.00.

Here is a variety of large and small churches, with accompanying church school facilities, shown in plans and renderings, with detailed criticism of the layouts from the standpoint of practical usefulness. As in his book on church school buildings, Mr. Conover includes an outline for organizing a building program within a church, and emphasizes ways and means of understanding between architect and clients.

BAY AREA EXHIBIT

Domestic Architecture of the San Francisco Bay Region. San Francisco Museum of Art (War Memorial Civic Center, San Francisco 2, Calif.), 1949. 8¾ by 11½ in., 28 pp., illus. Paper bound.

As noted in the Bay Area article published in the September issue of ARCHITECTURAL RECORD, the exhibition of which this book is the catalogue was opened this fall by the San Francisco Museum of Art in collaboration with the Northern California Chapter, A.I.A., and is scheduled for a nationwide tour.

The catalogue contains a brief description of each of the fifty-two houses, and halftone illustrations of several of them. Several architects have contributed comments.

Lewis Mumford, for example, expresses his admiration for the Bay Area architecture of the past fifty years as "a steady organic growth, producing modern forms accepted as natural and appropriate by both client and architect." Elisabeth Kendall Thompson explores "Backgrounds and Beginnings" of the region, noting the many influences, all expressing individuality, which have at the same time contributed to a tradition. William Wurster speaks of the influence of the clear California air, with its stress on distant views rather than foreground detail; and of the long dry season which demands paved or graveled ground areas.

Gardner Dailey notes that the postwar house embodies "a happy recognition of the value of the vertical line and a great deal of inventiveness in construction," and that in the Bay Area it has "a definite West Coast character." Francis Joseph McCarthy thinks that the distinguishing Bay Area characteristic may be the sound client-architect relationship, since "talent and effort on the part of the architect must go unproductive to a varying degree without the free opportunity which only an understanding client can supply."

(Continued on page 30)

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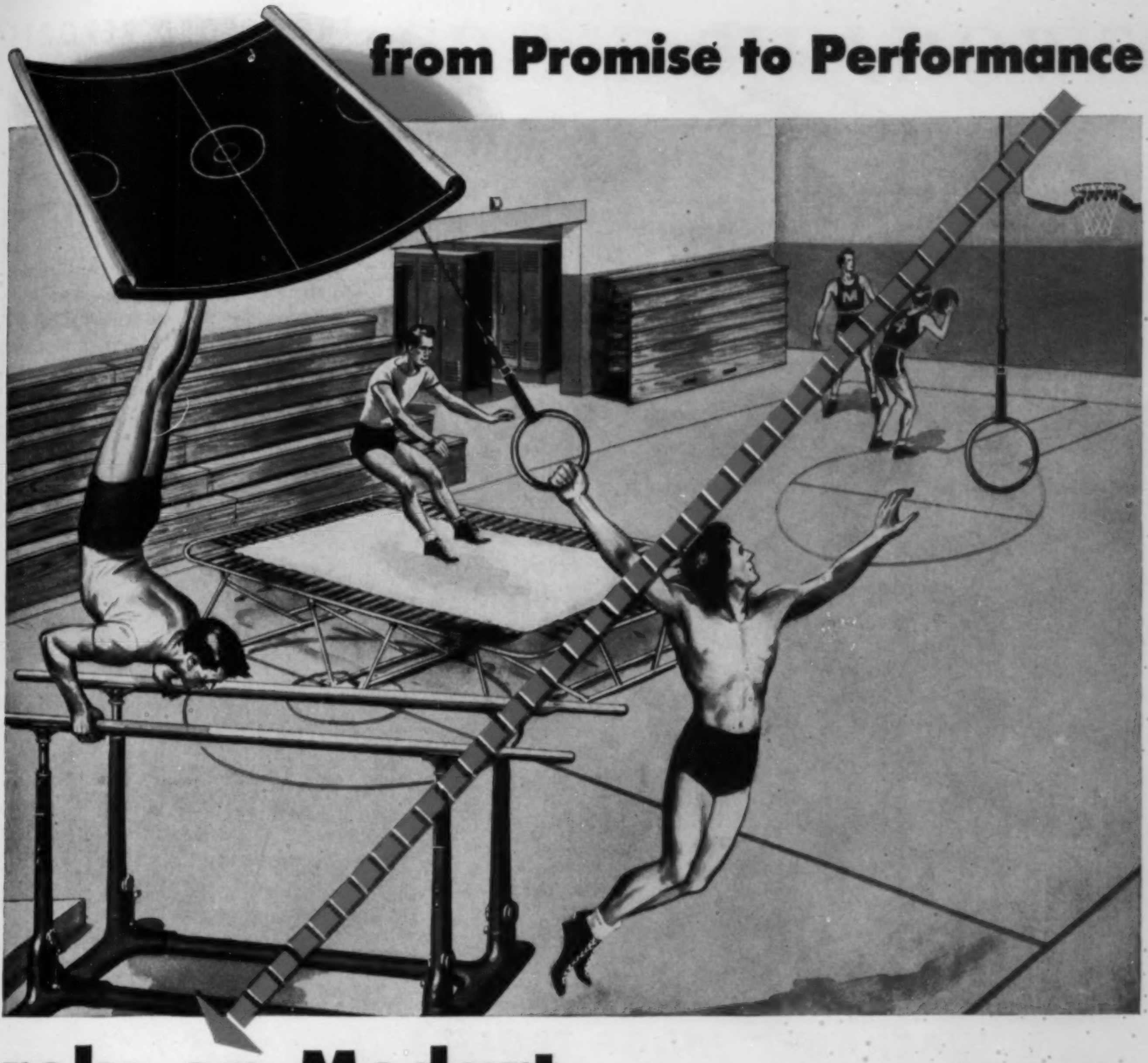

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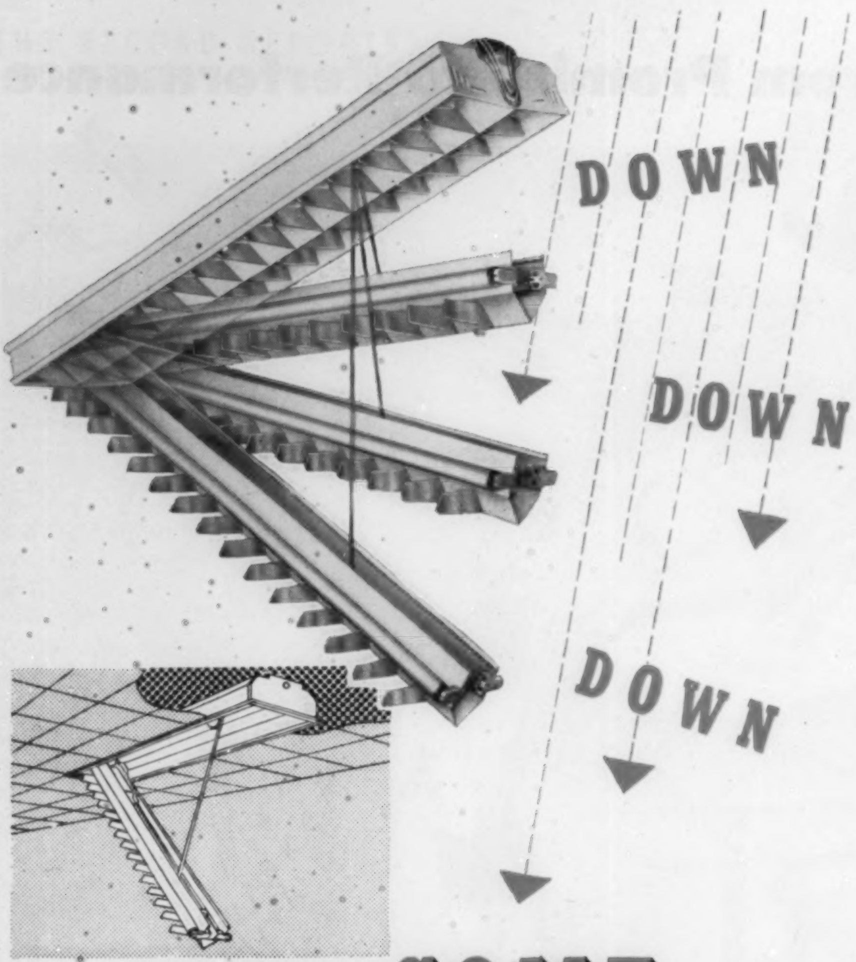

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BOOKS

(*Continued from page 28*)

Clarence W. W. Mayhew pays tribute to the influence of the Japanese, who have designed for centuries for conditions very similar to those in California, and whose solutions have been freely borrowed; notably window walls, modular construction, sliding partitions, and built-in furniture.

Richard B. Freeman contrasts the houses represented in the exhibit with the speculative building also being done in the Bay Area, which he warns may become the slums of tomorrow.

GROUTING AND GALETTING

Old Churches and Modern Craftsmanship. By Alban D. R. Caroe. Oxford University Press (Amen House, London E. C. 4), 1949. 5½ by 8⅜ in. xxi + 248 pp., illus. $4.50.

The repair of old churches is of particular current interest in England, but even in this country there are churches and other old buildings which have suffered from time and neglect if not from bombs. For anyone attempting to remedy such damage — or for the student of historic building — this book will furnish a systematic study of old methods of masonry and timber construction, ways of maintenance, and the effects of the principal destructive agents.

In addition to the study of physical restoration, suggestions are made for replanning of old churches when necessary to meet present day needs.

LIGHT READING

The Story of Magnesium. By W. H. Gross. American Society for Metals (7301 Euclid Avenue, Cleveland, Ohio), 1949. 5 by 7½ in. 260 pp., illus.

Designers who have occasion to use magnesium in structures or other equipment will find a great deal of easily assimilated material about magnesium technology in this small book, which was originally intended as a text for plant courses or for supplementary reading in technical high schools. It covers the history and economic importance of magnesium, as well as its production, fabrication, finishing, and the many ways it is used in the making of lightweight structures, tools, and equipment.

FRESH MEADOWS

A refreshing concept of community planning in a 3000-unit housing development for the New York Life Insurance Company

VOORHEES, WALKER, FOLEY & SMITH, ARCHITECTS AND ENGINEERS

Sigurd Fischer Photo

The true significance of Fresh Meadows in the realm of architecture is not to be seen in a quick glance, no matter how enthusiastic the casual observer might be. Lewis Mumford, no casual observer, has called it "probably the best-looking piece of architecture in the metropolitan area," and "perhaps the most positive and stimulating example of large-scale community planning in this country." * Even so, one feels impelled to dig a bit deeper into significance in the professional sense.

Fresh Meadows seems to have earned those encomiums by a concentration on the deeper needs and delights of people, rather than the surface aspects of architecture. At first glance, one might almost assume that the architects gave little thought to the appearance of their buildings, although this would not be true

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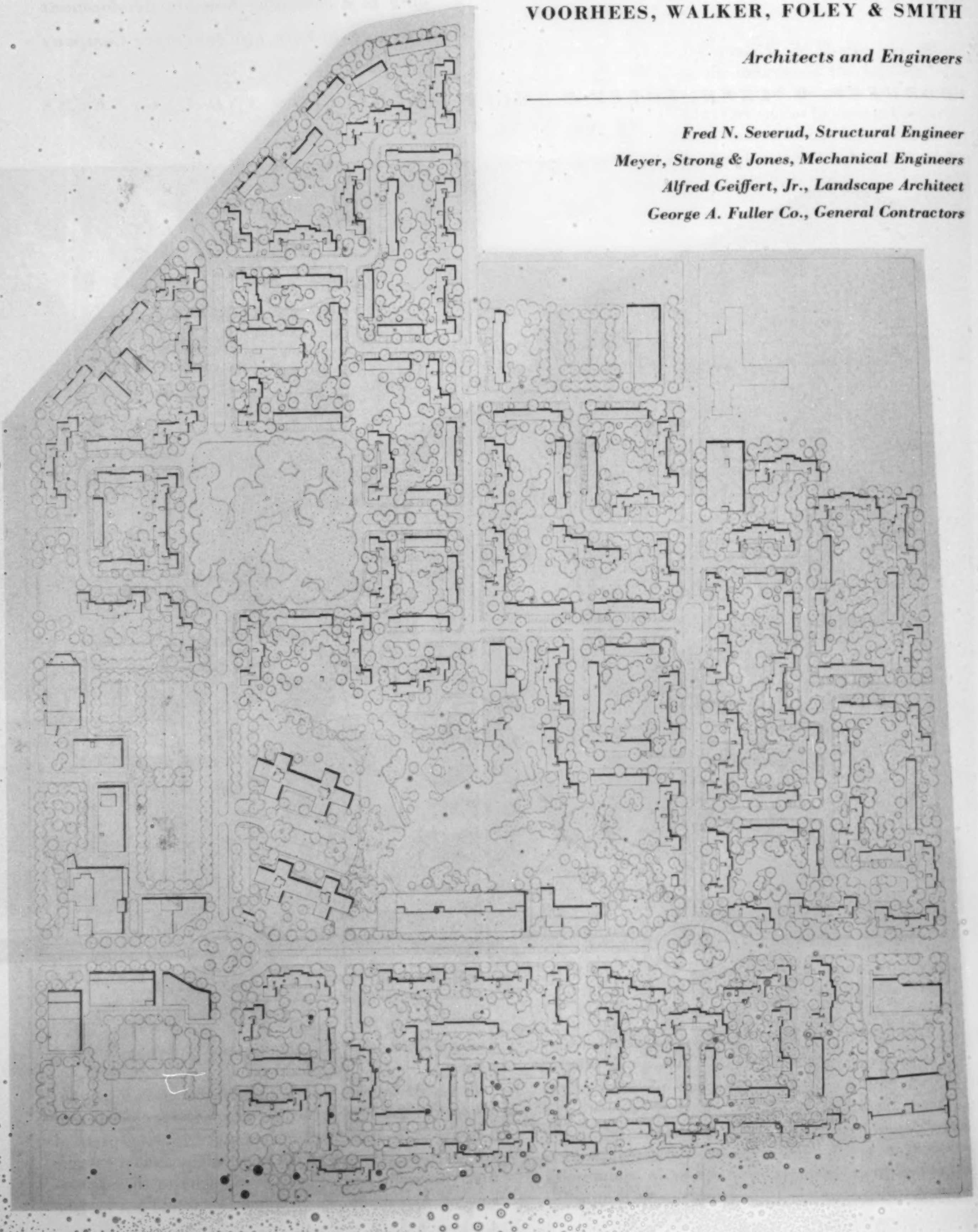
* *The New Yorker, Oct. 22, 1949.*

FRESH MEADOWS, Queens, New York City *(Continued from page 85)*

VOORHEES, WALKER, FOLEY & SMITH

Architects and Engineers

Fred N. Severud, Structural Engineer
Meyer, Strong & Jones, Mechanical Engineers
Alfred Geiffert, Jr., Landscape Architect
George A. Fuller Co., General Contractors



— indeed, quite the contrary. It is true, though, that the buildings do not assert their smartness in the current vocabulary; neither do they hum softly in the sweetness of yesterday. They do not impress one with the gadgetry of sun control or factory assembly. Their effect, esthetically, is a quiet, timeless unobtrusiveness. Thus they make a subtle but positive contribution to an overall planning achievement which will be discussed in housing and planning circles for years to come. For Fresh Meadows breaks boldly with precedent in many respects.

The outstanding quality of Fresh Meadows is a matter of human values. It is human in density, in scale, in appearance, in landscaping, in the manner of living it offers. The architects, in the person of Perry Coke Smith, partner in charge, credit this first of all to the wise foresight of the New York Life Insurance Company. This company was building its first housing project, and was determined to study the whole subject for itself, before following any customary patterns. The company's own architect, G. Harmon Gurney, worked with the commissioned architects to make a long advance study of housing even before looking at any sites.

The project then is "investment building" as opposed to "speculative building," with all of the advantages of ample funds for large-scale operation, over a long period, and a sort of investment interest in humanity. It is worth noting that this type of operation is more and more in evidence in this particular building cycle.

First break with tradition is the diversity of living units at Fresh Meadows. Instead of concentrating on some type of accommodation considered the "highest and best use" of land, Fresh Meadows projected family life from marriage to old age, and provided a variety of units for varying family requirements, so that people can live on there, can put down roots and not be forced to move out by changing space needs. Though "homogeneity" has been the basis of much community planning — indeed has always been fostered by zoning — the diversity of Fresh Meadows obviously makes more sense to its tenants. And who can show it doesn't also make economic sense?

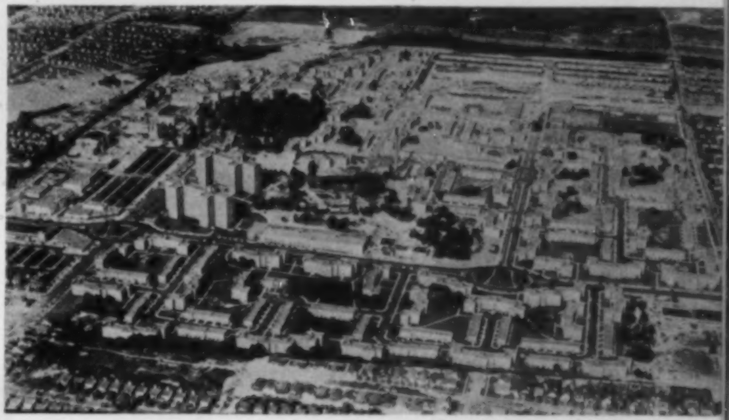
The basic fact of Fresh Meadows is the low population density. In its 174 gross acres, there are 11,000 people, in 3000 apartments, or 17 families per acre. This was planned that way, before the site was selected; and the site, the former Fresh Meadows Country Club, was purchased because its land cost and other attributes fitted into the projected scheme.

Mumford is pleased with such figures on density, but still objects violently to the inclusion of two 13-story apartment houses. Yet these two buildings, concentrating on small land area a sizeable portion of the smaller apartment units, make possible one of Fresh Meadows' most attractive features — its vast areas of open verdure. A great acreage right beside these tall structures is open lawn and woods, for that spacious vista so much craved by city folks. Esthetically, the tall buildings are quite pleasing; they are at once a landmark, seen from 'way up the Boulevard, and a focus for the many two- and three-story buildings scattered about them. Actually they don't suggest congestion, but just the opposite.

Perhaps the most successful thing of all is the neighborhood feeling of Fresh Meadows. This, too, was planned that way. In fact it was probably the one prime objective of the architects, and the subject given most study. The buildings are disposed in small groups, each group informally outlining a neighborhood, a comfortable unit of this world that a small child can grasp and accept. Each little group has its own play yard, with equipment, its own stretch of lawn with benches and trees, its own limited vista, its little private terrace gardens, and no doubt its own neighborhood gossip. The buildings are varied in each grouping, even to different brick color. Even contour lines were carefully worked out to contribute to neighborhood unity. (See p. 88.)

Such a concept of planning explains why the site plan is not done in beautiful sweeping curves, or in a treelike pattern of cul-de-sacs. In general the views in Fresh Meadows are kept in small scale, with the exception of the open central park area, and the wooded six-acre tract where a stand of tall oaks is preserved as a natural oasis.

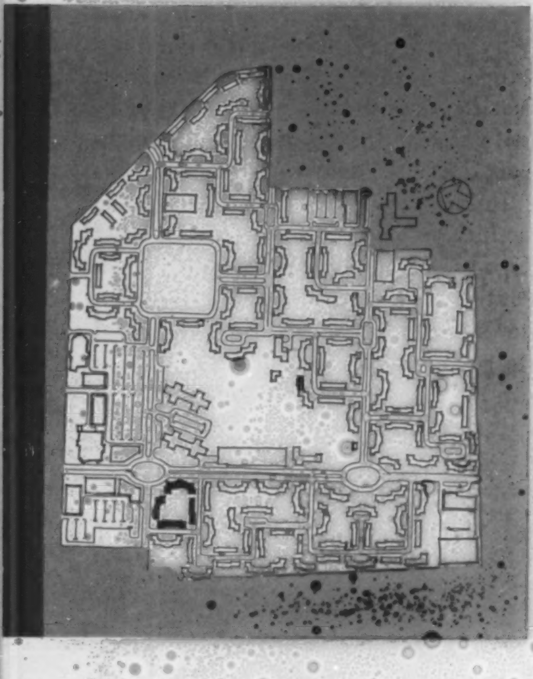
Fairchild Aerial Surveys Photo



The neighborhood idea also required streets, safe streets to be sure, but streets, to bring the family car to the door (p. 90). Its road system is another thing that will make this development discussed widely.

At Fresh Meadows, lawns and trees are almost objects of worship. The New York Life has spent a cool million dollars on them (p. 89).

The necessities of family life are provided from three separate shopping centers (p. 96). One is large enough to attract such stores as Woolworth's, Bloomingdale's, a theater, restaurant, and bowling alley. Two smaller ones house small groups of service stores. These too are in parklike surroundings, with wide walks and planted trees. They are an important part of the general scheme of Fresh Meadows which makes it (Mumford's words) "a slice of the City of Tomorrow . . . that will stand up under the closest critical inspection."



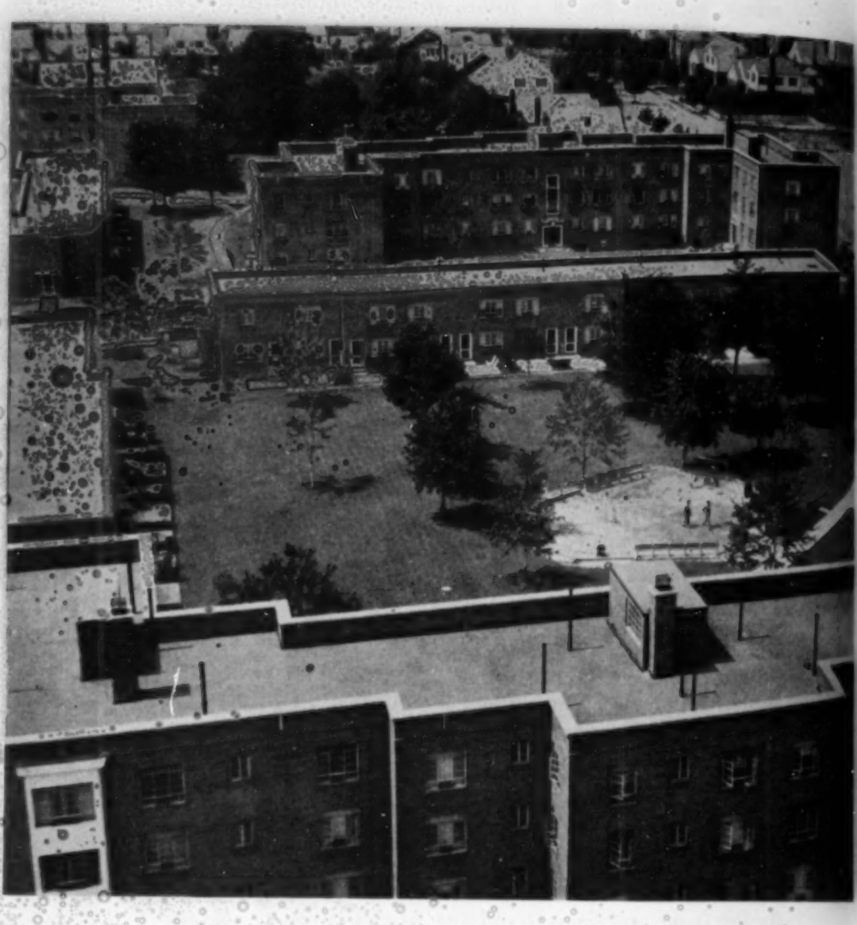
The successful planning for people that makes Fresh Meadows a significant architectural achievement begins with a neighborhood scheme of land use. Its whole success is a matter of scale, human scale, humane scale. It cuts out of a huge metropolis little neighborhood pieces that human beings can grasp, can cope with and enjoy. Each child can start in a small world, not a great grid that stretches endlessly.

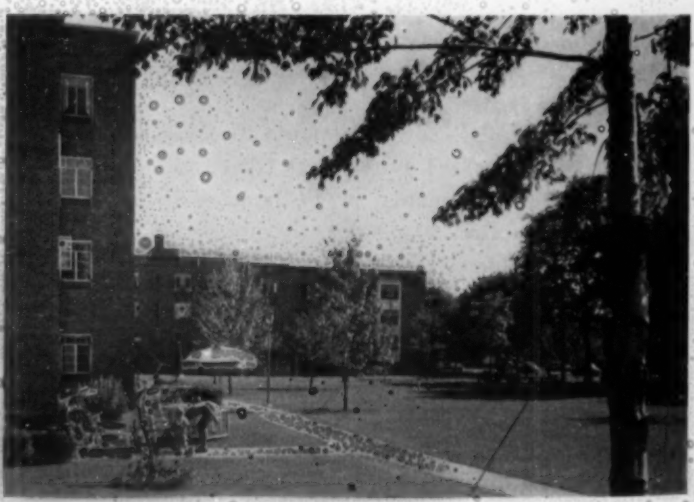
This is achieved by disposing the buildings, themselves done in residential scale, in informal groups which combine to isolate small neighborhoods. It is not a formal quadrangle plan, and the lines of demarcation are not regular or well defined. The groupings do, nevertheless, realize the same intimate character.

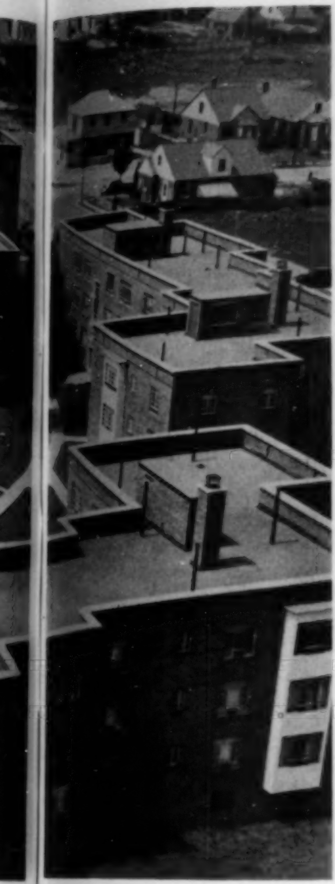
Two-story row houses are mixed in with three-story apartment buildings. And the pattern is always varied enough so that there is no sense of classification.

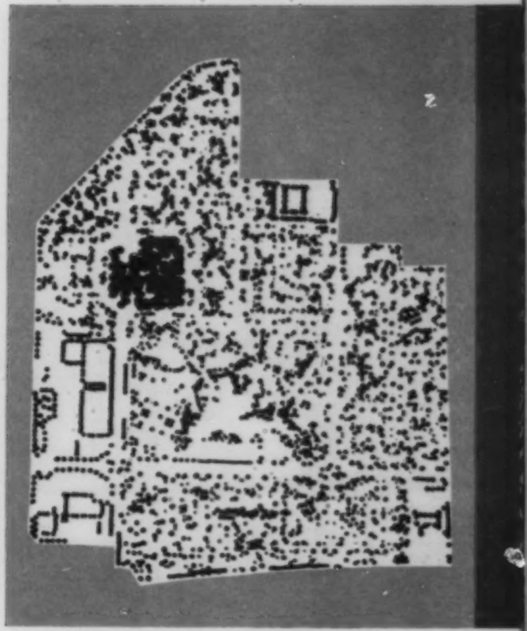
Although the buildings do repeat similar types of apartment units, there is variation in shape and size as well as in disposition.

Differences in brick color also have a subtle but definite effect in avoiding the character of a "housing project."









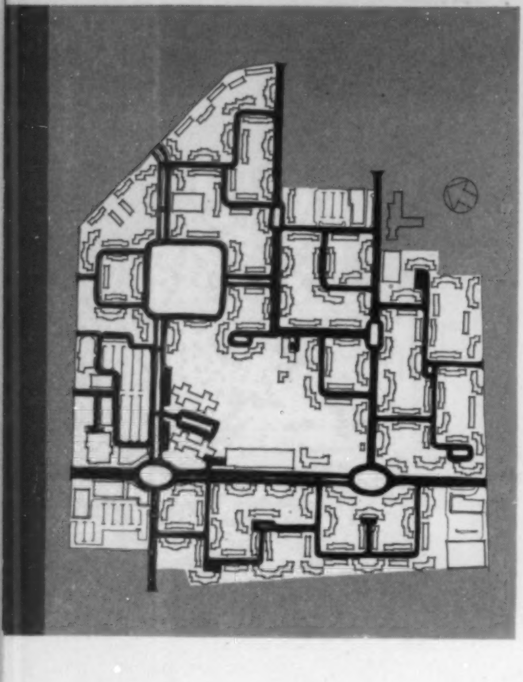
Sigurd Fischer Photos

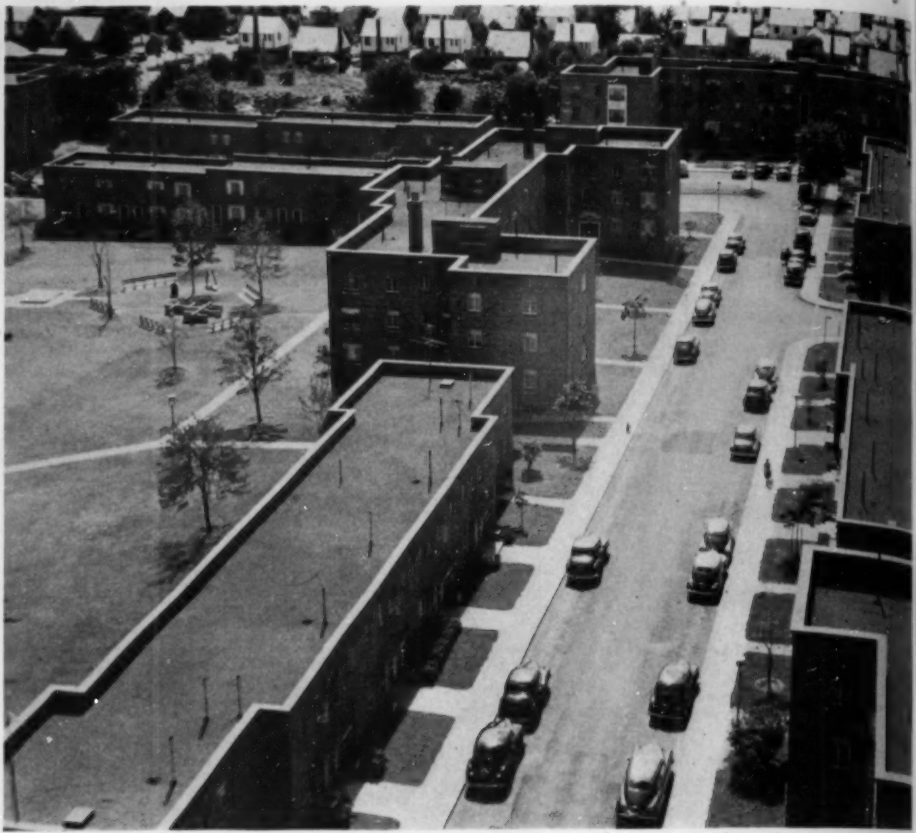
Evident in the pictures throughout this presentation is the attention given to verdure. Existing trees on the property, which was a golf course, were preserved wherever possible, not only preserved but also given expert care. Large sized trees were planted also, and gardens and shrubbery.

The intent always was a naturalness, not a formal display.

The New York Life Insurance Company spent a million dollars for planting lawns and trees.

What is not so evident in the pictures is the care that went into the grading. While in the main, of course, gentle natural contours were preserved, in many instances a subtle slope was used to contribute to the neighborhood objectives.





Planning at Fresh Meadows assumed that automobiles are a convenience as well as a hazard. Thus the auto is controlled, not banned.

1. Bring the Car to the Door. A great new American business — tourist camps and highway hotels — has been built up on the premise of the car at the door, and this premise is basic in the Fresh Meadows road system.

2. Provide Sufficient Roadway. Bringing the car to the door necessitates a certain minimum of roadways. As a planning assignment, this is not as simple as it sounds; it tends to conflict with the idea of "quadrangle" grouping of buildings.

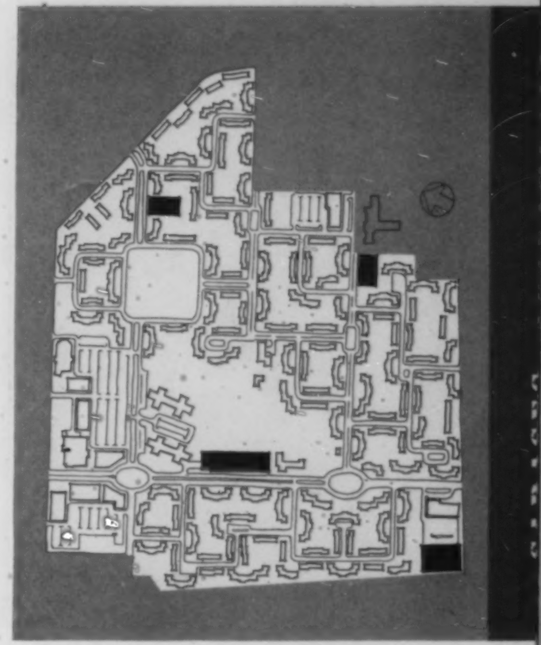
3. Keep the Roads Continuous. Why should the milkman have to pass twice? The principle of continuous roadways was considered of great importance, in the interests of free traffic for both service trucks and tenants' cars. While this principle seems easy to accept, it is the subject of much discussion. It goes counter to the cul-de-sac scheme which has been much favored for many years. The final decision here was that the cul-de-sac overstresses protection against the automobile, which is easily gained in other ways.

4. Make Speeding Impossible. The safety of the road system is carefully planned in several ways. Streets are kept short; only one is continuous through the project, and that by insistence of the city authorities. This one is broken by oval center islands so that cars must slow down. The street pattern elsewhere is calculated to keep cars turning frequently enough to keep them at slow speed. It is difficult to drive at over 15 miles per hour.

Another safety principle was to keep the road exits from the project at safe points, not to bring them out indiscriminately.

5. Eliminate Short Cuts. The final major principle was to keep the pattern so broken up that no road would become a short cut.

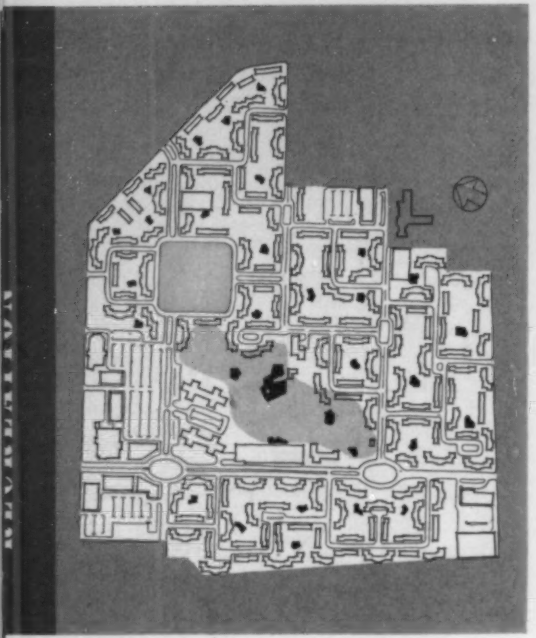
Sigurd Fischer Photos



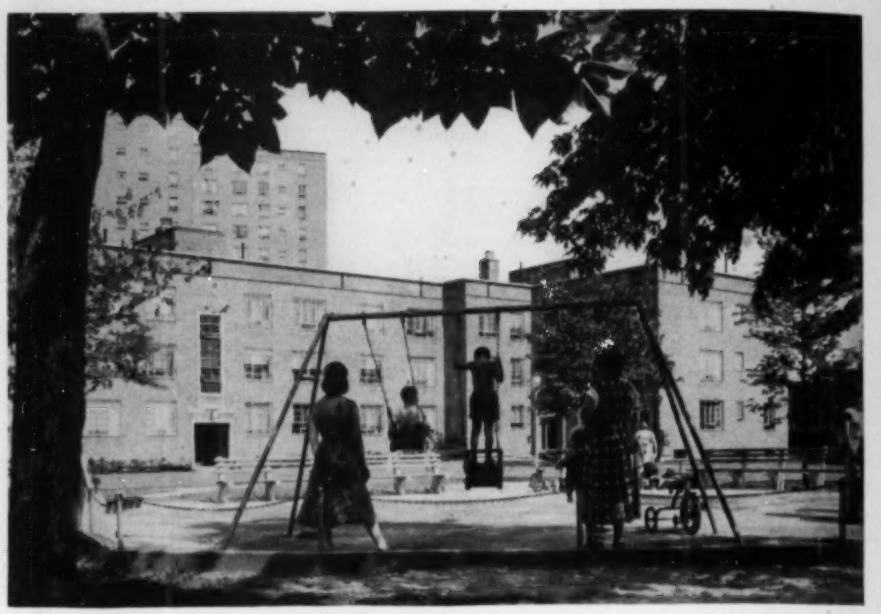
While the automobile was made welcome in Fresh Meadows, its counterpart, the garage, is always a plague in a housing development. It might be argued that if you plan for the car at the door you ought to keep the garage there too. But things soon get out of hand — rows of garages defeat any attempts at beauty and order.

Here the decision went in favor of a few large parking garages. The next question was capacity required. More garage space was planned than was finally built; the end figure was one car for each two apartments. It may be necessary to add more later and nobody will be happy if it has to be done. But there really is plenty of room for additional buildings.

Placing the buildings in a residential neighborhood was the next problem. Here it is done by using six-level, staggered-level type of building, each sunk about half into the ground. The buildings then emerge from the ground in scale with surrounding buildings. And some architectural care in their design — yes, even some ornamentation — makes them settle in comfortably with their neighbors.



Sigurd Fischer Photos



Planning for play and recreation takes several forms:

1. For Pre-School Children. Each neighborhood group has in the center of the open lawn area a paved play yard with swings, slides, sandbox and so on. And of course the interior walks are fine for the tricycles and other juvenile rolling stock. Children are naturally attracted to the inside, not the streets.

2. For Larger Children. The large open area in the center of the development has acres and acres available for youngsters with their first ball and bat, or for full-scale ball games.

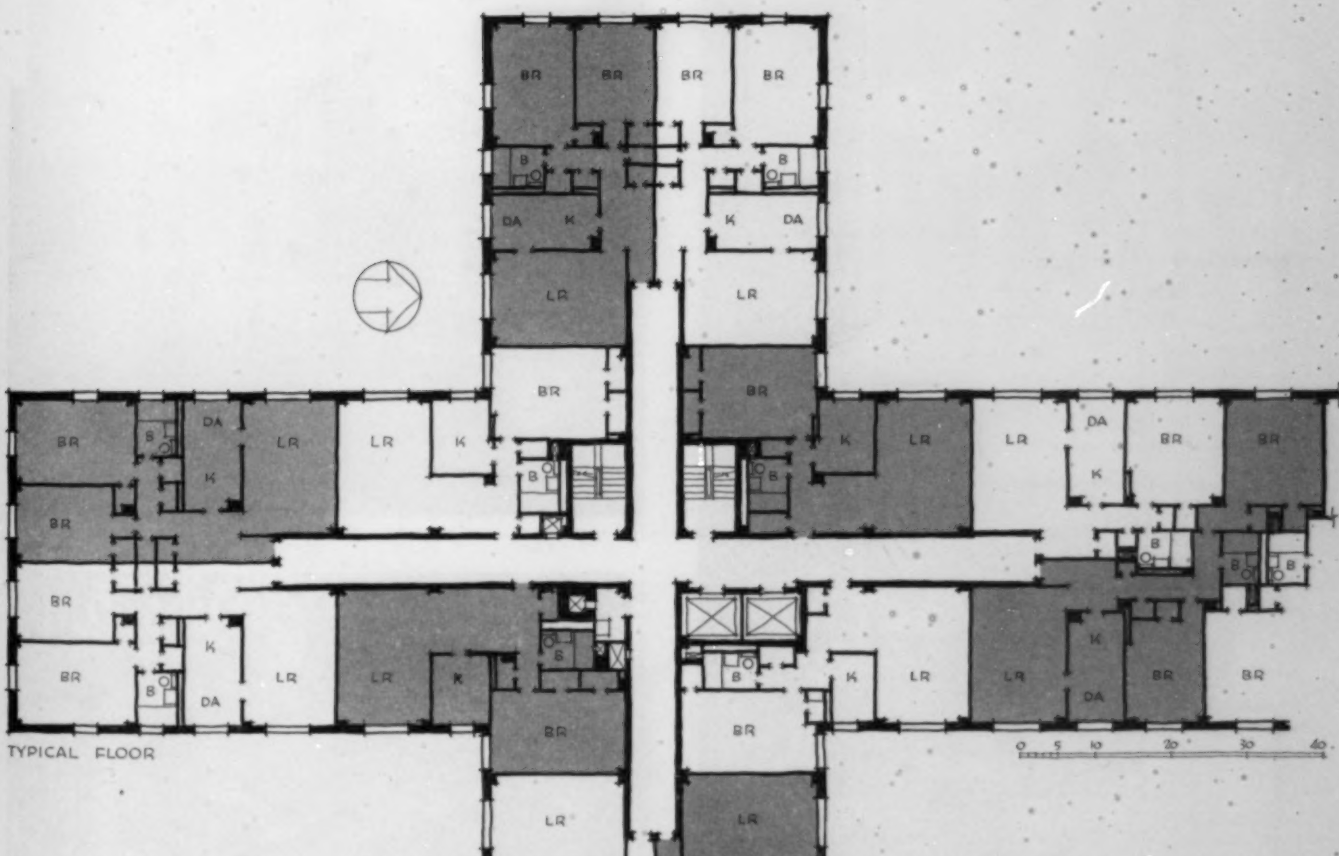
3. For Everybody. Quite unique in housing "developments" is a reserved area, a large city block square, which is just plain woods. It will remain a true woods, for anything from picnics to quiet contemplation.

4. For Adults. Beyond the theater, restaurants, and bowling alley (N. Y. Life retains operating control of the alleys), provision has been made for other adult activities, as yet unplanned. Clubrooms are available in the restaurant building, and various activity rooms are reserved in basements.

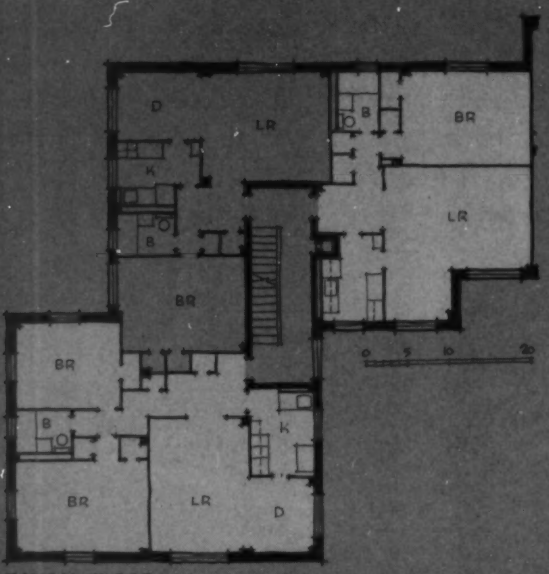
Plans for the 13-story apartment buildings were chosen after a long preliminary study. It was shown early that a 13-story scheme with 12 apartments for each elevator core would be logical on several counts; it would be economical for reinforced concrete construction, would house up to 450 people per acre at 20 per cent land coverage, would use full capacity of one pair of elevators, and would be a good combination for maintenance crews.

It was decided early to use an asymmetrical scheme, in a double cruciform arrangement, as this layout is best for orientation. Note that the two buildings have their long axis due north and south, and that only two units in each group have only north orientation.

Another early decision was to use an interior foyer to give each room privacy, as this was found to add only 2½ per cent to total cost for each apartment.



TYPICAL FLOOR


D
LR
B
BR
LR
K
B
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BR
B
K
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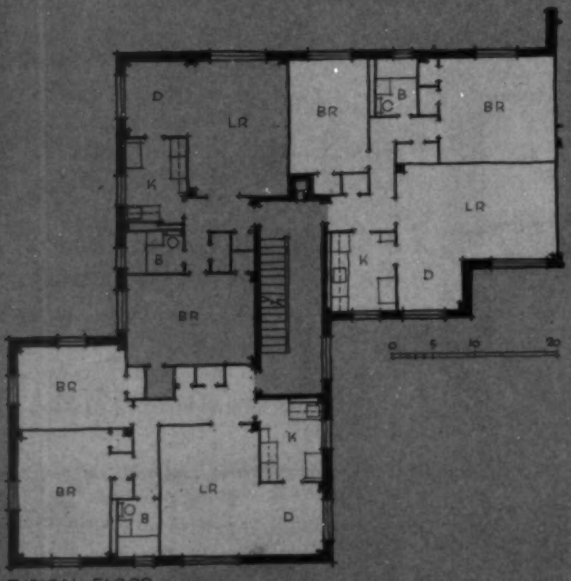
LR
D
0 5 10 20

TYPICAL FLOOR


D
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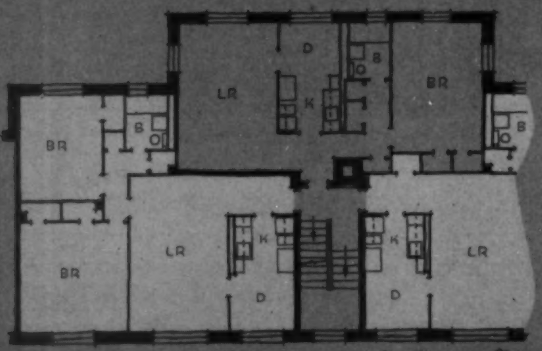
TYPICAL FLOOR

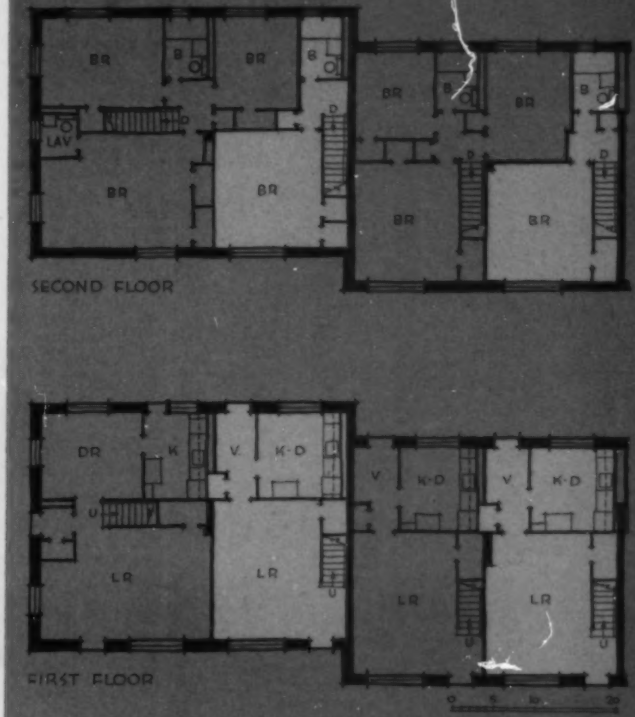

D
B
BR
LR
K
BR
B
B
LR
K
K
LR
BR
D
D

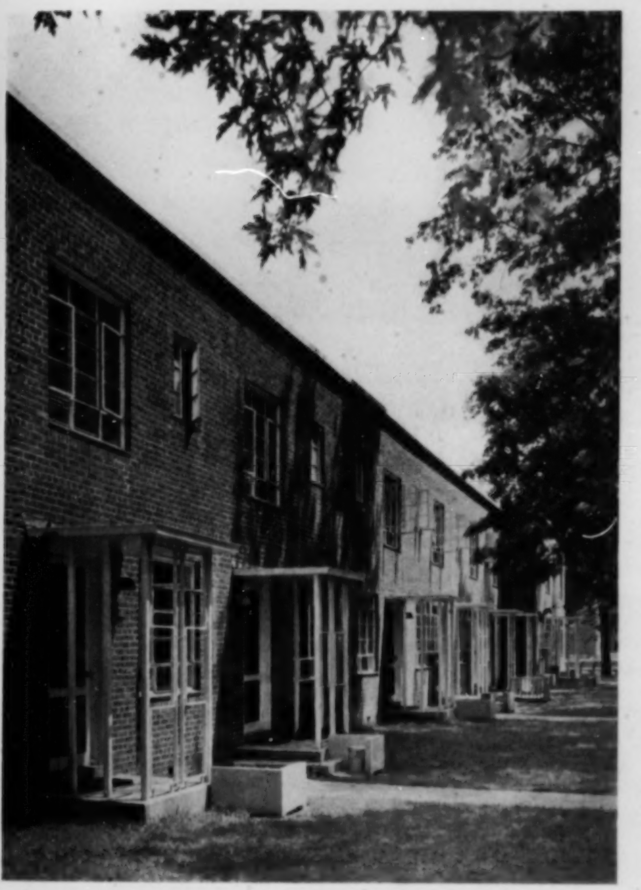
TYPICAL FLOOR

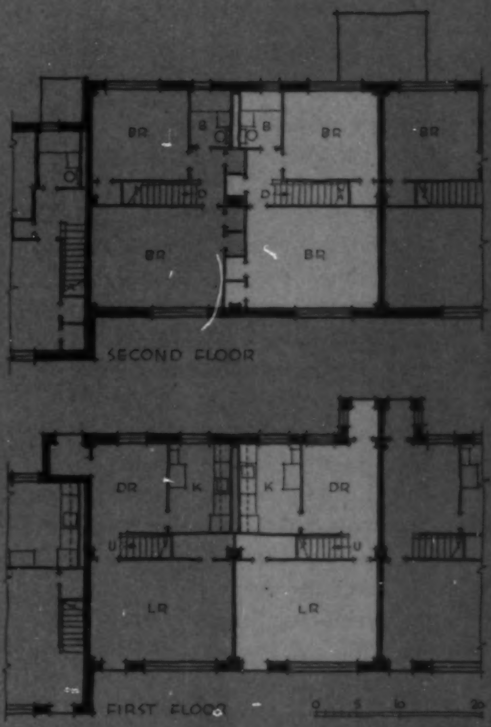
Important points in the plans of 3-story apartment buildings are: 1. entrance foyers for a sense of privacy; 2. generous dining space in all units; 3. generous closet space; 4. cross ventilation, with double outlook for most apartments; 5. fireproof construction — load-bearing brick walls, concrete floor and roof slabs and stairs, gypsum hall and party partitions.

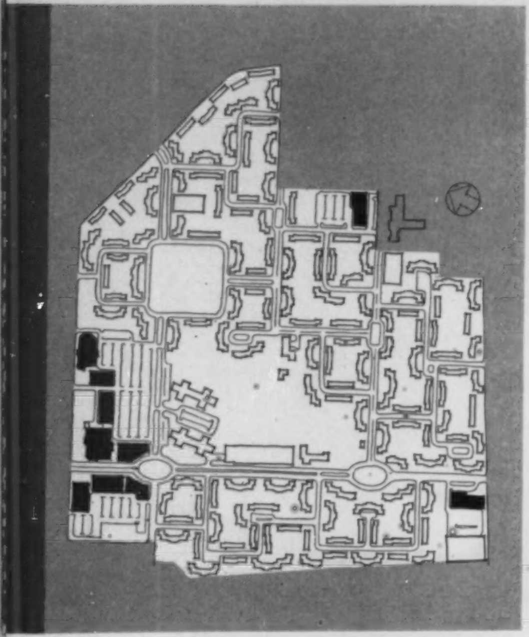
Sigurd Fischer Photos

Row houses all face living rooms to interior courts, though main entrance opens to street. Some units have separate vestibule, with dining space combined with kitchen; some reverse this — separate dining rooms, with small vestibule extending out from dining room. Bedroom space on second floor is arranged in various combinations — one to three bedrooms per apartment.


BR
B
LAV
D
SECOND FLOOR
DR
K
V
K-D
LR
U
FIRST FLOOR
0 5 10 20




BR
B
D
SECOND FLOOR
DR
K
LR
U
FIRST FLOOR
0 5 10 20



Shopping needs of the 11,000 people in Fresh Meadows (and added thousands in neighboring areas) are supplied from one major shopping center and two minor ones.

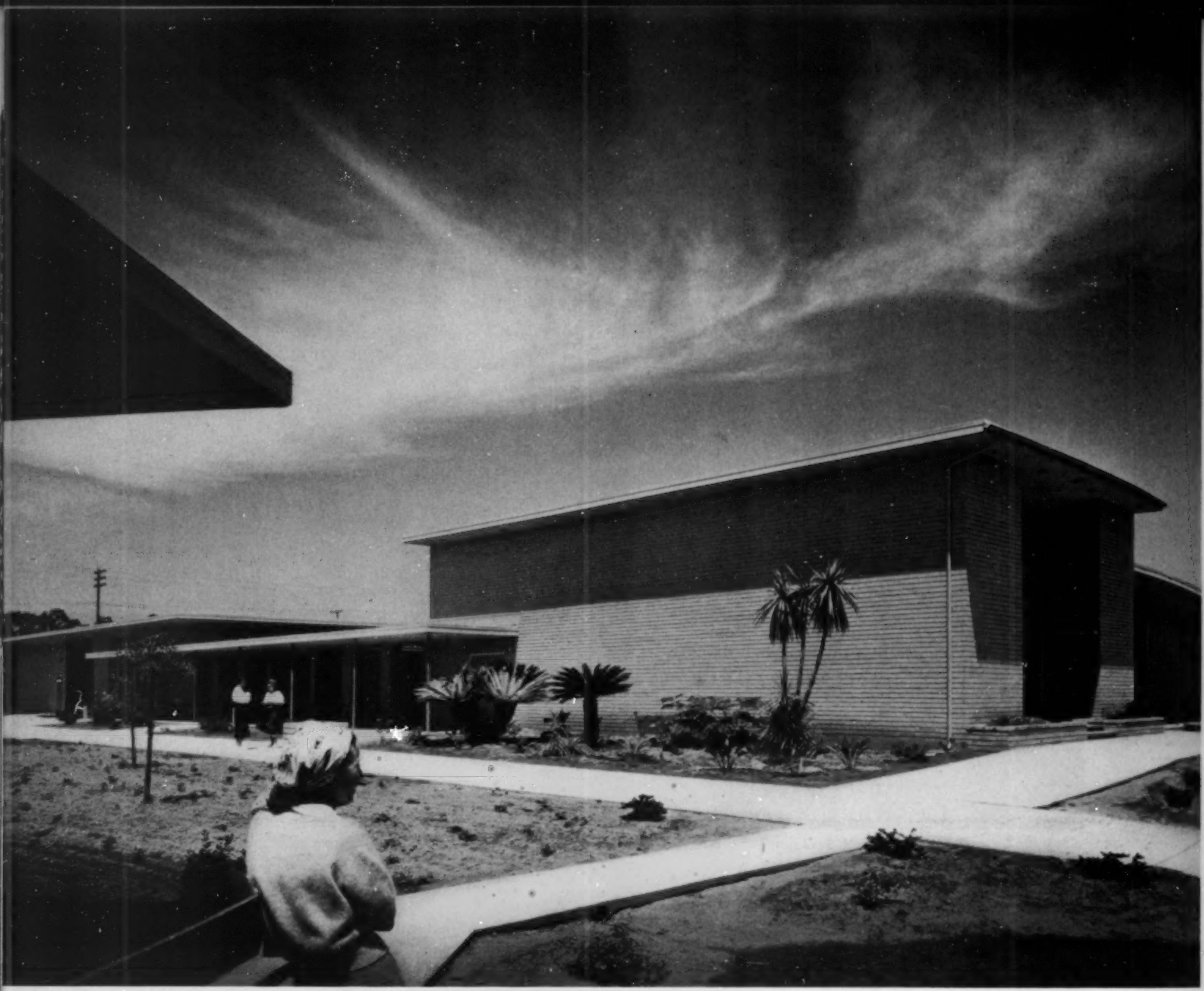
The larger one is much more than a neighborhood group of stores; it is an integrated business center carefully planned and controlled (James Felt & Co., real estate consultants). The major store is a branch of Bloomingdale's department store; there is also a theater, a medical office building, two banks, and other stores ranging from Woolworth's to small independent service stores, all selected to round out a business community of maximum usefulness and stability.

Designwise, the center is done with equal foresight. First visual effect is the same openness and verdure that distinguishes Fresh Meadows as a whole. What would be considered the most valuable corner is a public park; walks are wide and tree-lined; the baby-buggy parade is almost continuous. Stores are related to parking areas so as to minimize street traffic.

Architectural design is simple and clean, also closely controlled, though Bloomingdale's as the major attraction was given more prominence.

WOOLWORTH CO.

Sigurd Fischer Photos



Julius Shulman Photos

SANTA ANA JUNIOR COLLEGE, Santa Ana, Calif.

Ralph C. Flewelling & Walter L. Moody, Architects

SANTA ANA's forward-looking school board, faced with the necessity of providing more room for its Junior College, wisely decided to abandon the school's old ivy-covered buildings on the city's main street and move the campus out of town. Selecting a 50-acre site close to the northwest boundary of the city, ideally located in terms of the district's probable future expansion, the board drew up a long-range building program which will eventually provide the school with facilities for 2500 students.

As the photos and plans on the next five pages show, the new Santa Ana campus has been developed in such a way as to take full advantage of the Southern California climate. The most outstanding feature of the plan is the substitution of covered walks or open-air corridors for interior hallways everywhere except in the Administration Building, giving the students a welcome breath of air as they move from one class or activity to the next. All buildings are one-story, fireproof and earthquake-resistant.

Opposite

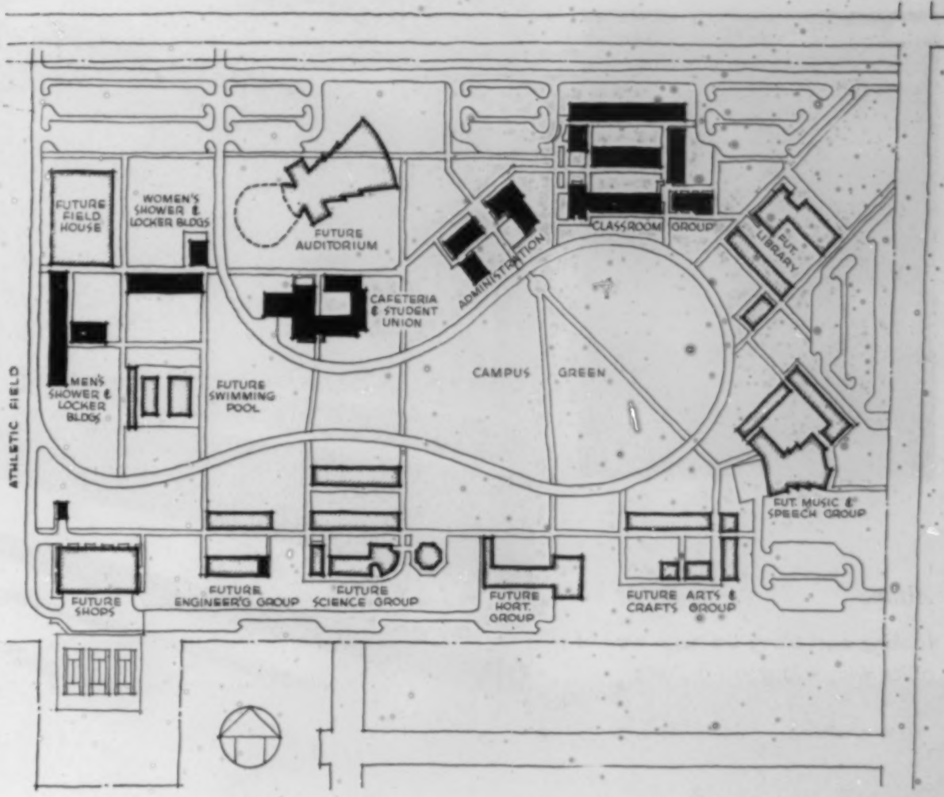
Main lecture hall and west wall of Classroom Building, with southeast corner of Administration Building in left foreground

Right

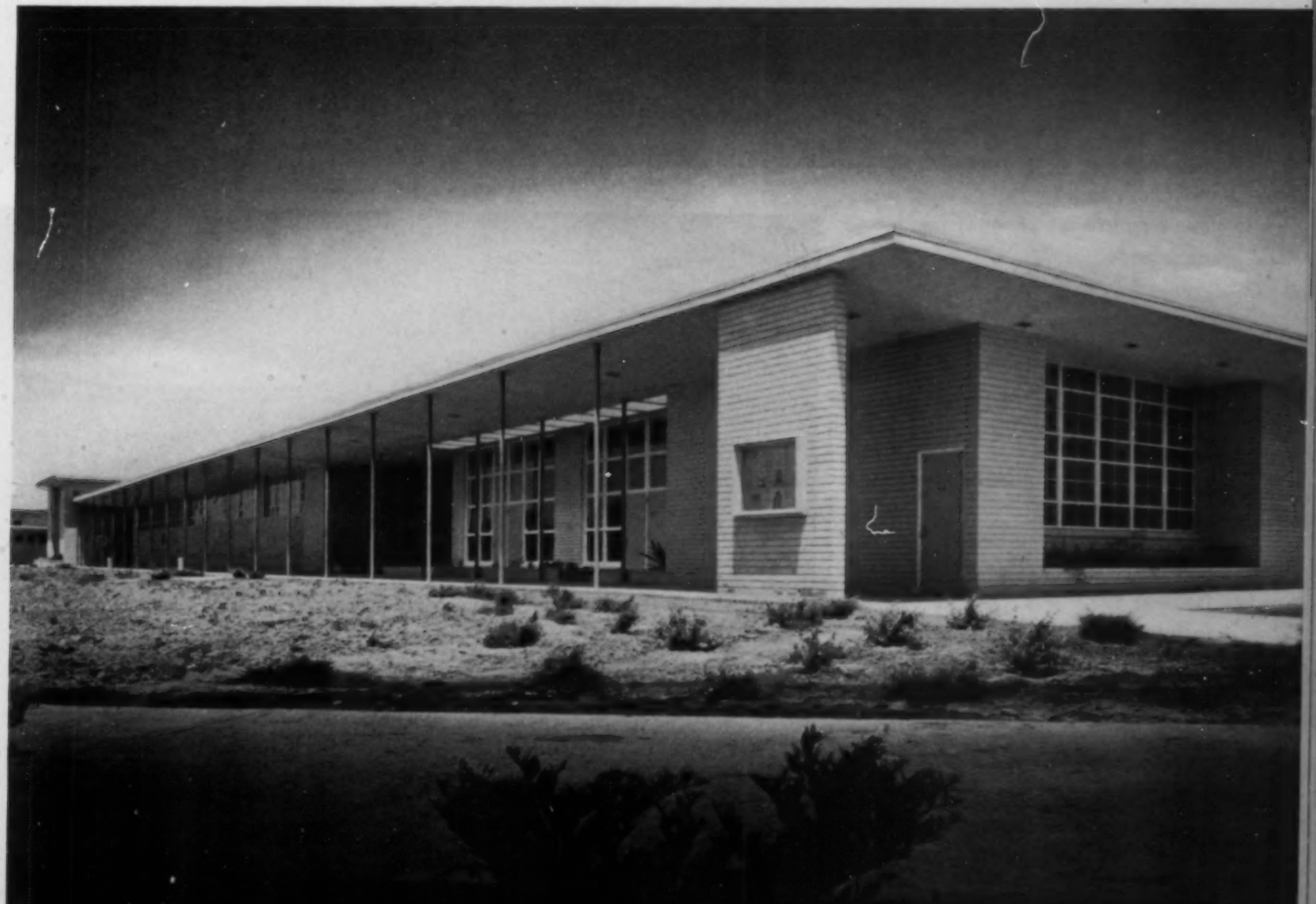
Master site plan is based on needs of maximum future enrollment of 2500 students. Auditorium, Student Union and athletic facilities are grouped for use as community center

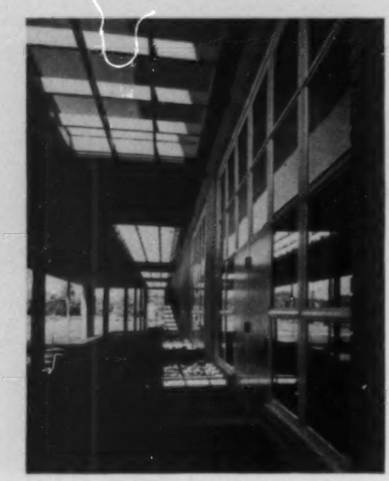
Below

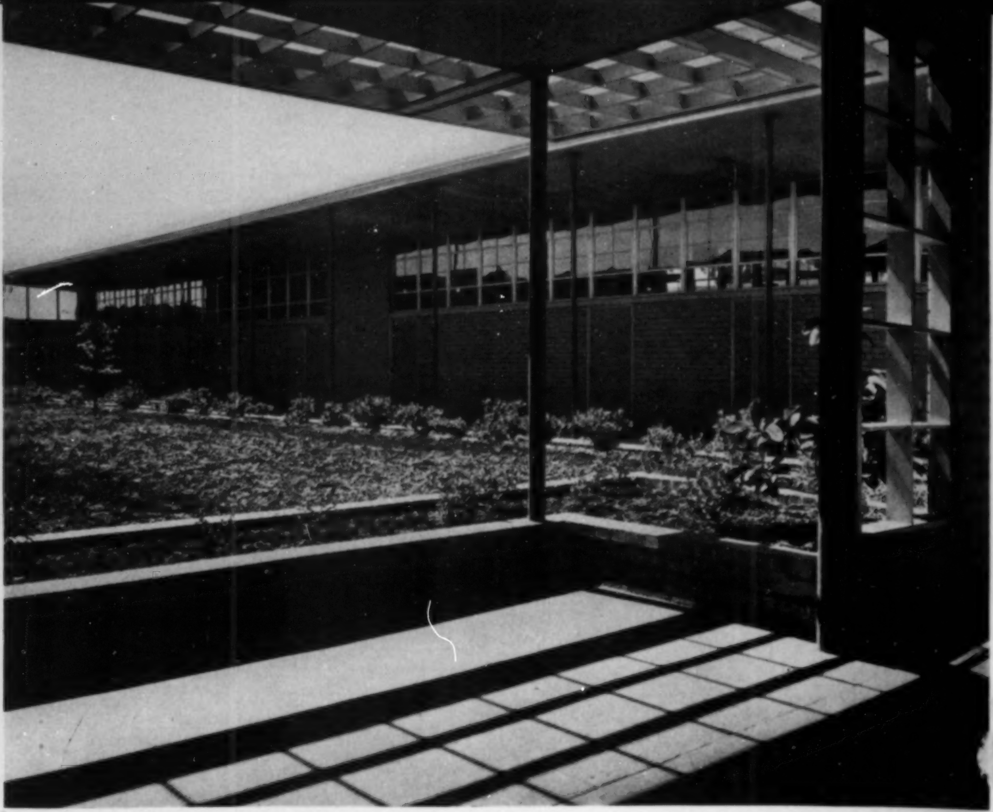
South wall of Classroom Building, looking toward main lecture hall


FUTURE FIELD HOUSE
WOMEN'S SHOWER & LOCKER BLDGS
FUTURE AUDITORIUM
ADMINISTRATION
CLASSROOM GROUP
FUT. LIBRARY
CAFETERIA & STUDENT UNION
ATHLETIC FIELD
MEN'S SHOWER & LOCKER BLDGS
FUTURE SWIMMING POOL
CAMPUS GREEN
FUT. MUSIC & SPEECH GROUP
FUTURE SHOPS
FUTURE ENGINEER'G GROUP
FUTURE SCIENCE GROUP
FUTURE HORT. GROUP
FUTURE ARTS & CRAFTS GROUP

Hillman & Nowell, Structural Engineers; Hillburg, Byler, and Hengstler, Mechanical Engineers; Louis H. Hendrisson, Electrical Engineer. General Contractors: Student Union Building, Means & Ulrich; all other buildings, Allison Honer







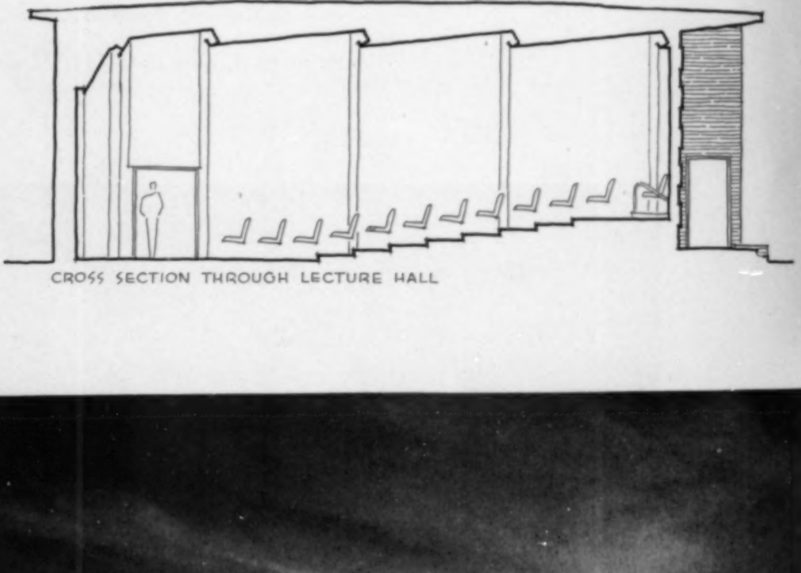
Above

Looking east along the north wall of office wing Classroom Building

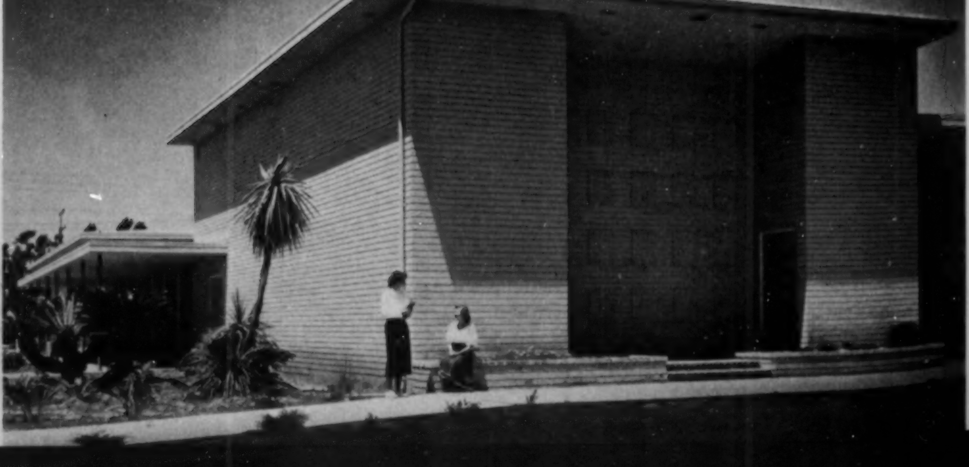
Julius Shulman Photos

Above, Right

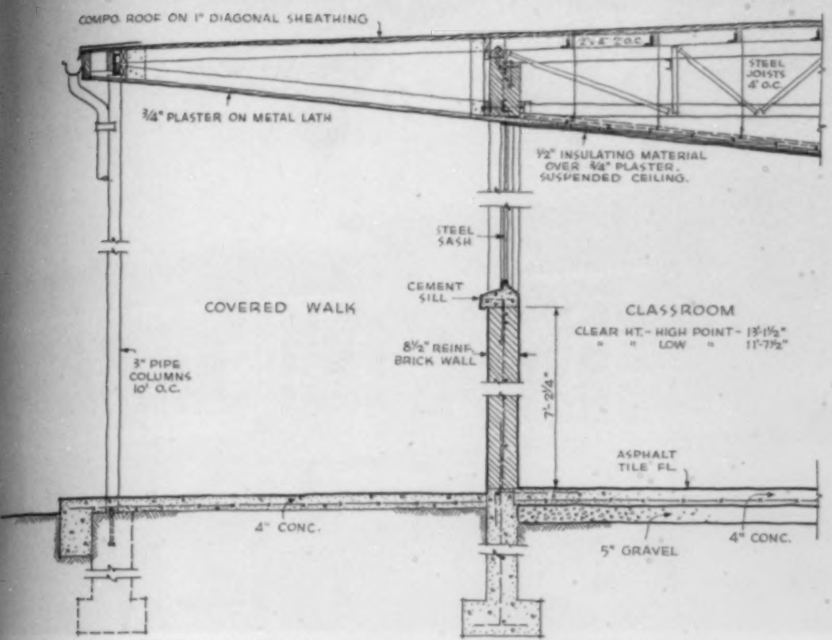
The south side of the central classroom wing. The 10-ft roof overhang which covers the outdoor passageways serves to keep direct sunlight from penetrating the rooms. Walls are waterproofed with cement paint on exterior. Partitions are solid plaster and metal lath. Roofs are composition, fully insulated; windows are awning-type. Each building has its own heating unit, thermostatically controlled; no air is recirculated, and four complete air changes per hour are provided



CROSS SECTION THROUGH LECTURE HALL

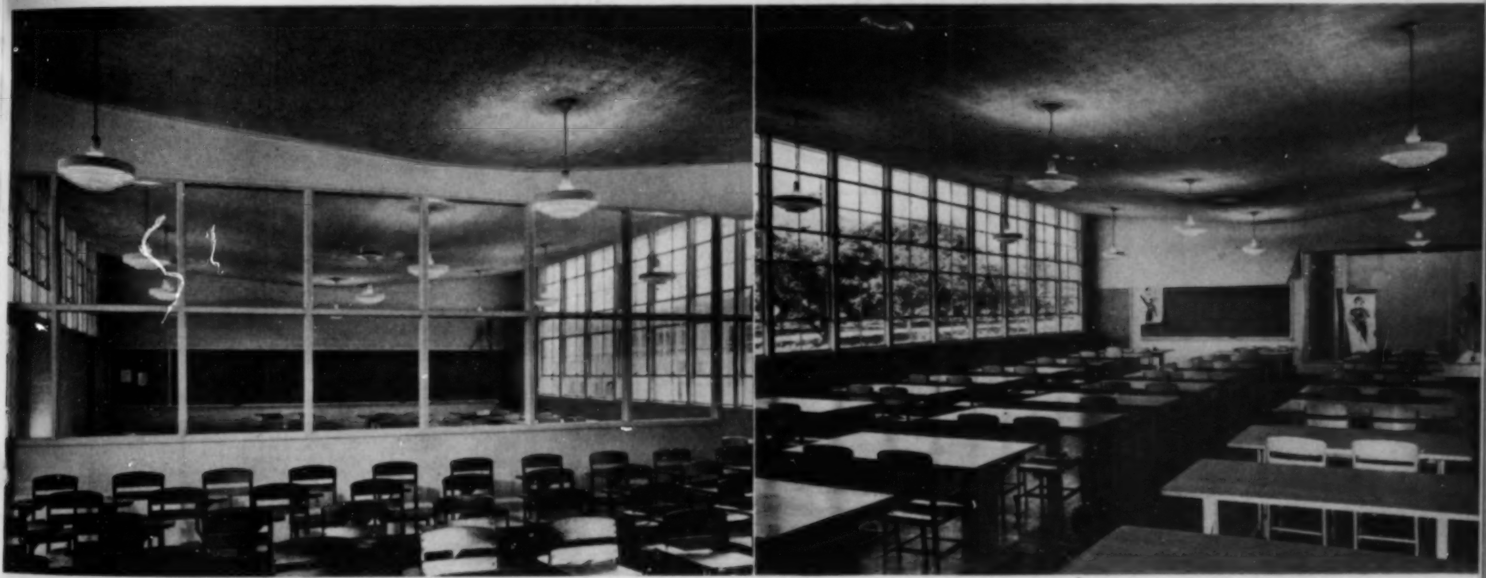


Main lecture hall in classroom building is well equipped to serve as an auditorium until the projected new auditorium and outdoor amphitheater (seating 1500) can be built: it has facilities for projection and for special lighting required for demonstrations. The architects report acoustical conditions excellent


COMPO. ROOF ON 1" DIAGONAL SHEATHING
2"x 8" 2 O.C.
STEEL JOISTS 4' O.C.
3/4" PLASTER ON METAL LATH
1/2" INSULATING MATERIAL OVER 3/4" PLASTER. SUSPENDED CEILING.
STEEL SASH
CEMENT SILL
COVERED WALK
CLASSROOM
CLEAR HT. - HIGH POINT - 13'-1½"
" " LOW " 11'-7½"
8½" REINF. BRICK WALL
3" PIPE COLUMNS 10' O.C.
7'-2¼"
ASPHALT TILE FL.
4" CONC.
4" CONC.
5" GRAVEL

TYPICAL SECTION THROUGH SOUTH WALL OF CLASSROOM BUILDING

Windows in the classroom building are 13 ft high on the north side, 8 ft on the south. All buildings are of reinforced brick masonry, constructed to resist seismic stresses. Steel reinforcing runs in both directions in the center web between outside and inside withes of brick, embedded in 1½-in. thicknesses of concrete. Prefabricated metal roof trusses were used to reduce labor cost; trusses were put in position by crane and dropped over anchor bolts previously placed in reinforced concrete or steel bond beams

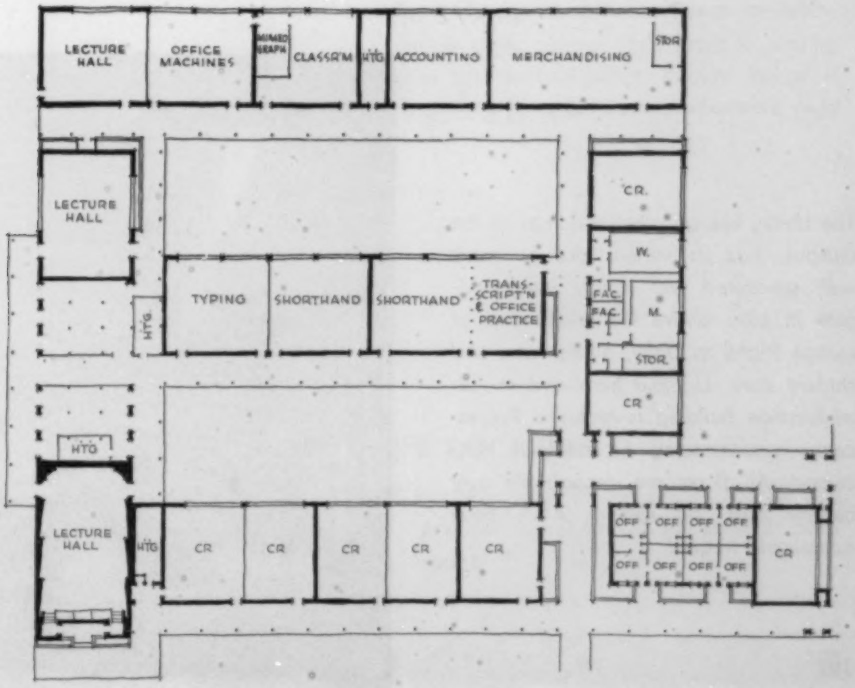


Above

Left, one of the classrooms in the central wing. Right, the large merchandising classroom, which has its own commodious storage area

Right

Students move from one class to the next along covered walks so placed as to reduce congestion to a minimum


LECTURE HALL
OFFICE MACHINES
MIMEOGRAPH
CLASSR'M
HTG
ACCOUNTING
MERCHANDISING
STOR
LECTURE HALL
CR.
W.
TYPING
SHORTHAND
SHORTHAND
TRANS-SCRIPT'N & OFFICE PRACTICE
HTG.
FAC.
FAC.
M.
STOR.
CR
HTG
LECTURE HALL
HTG
CR
CR
CR
CR
CR
OFF
OFF
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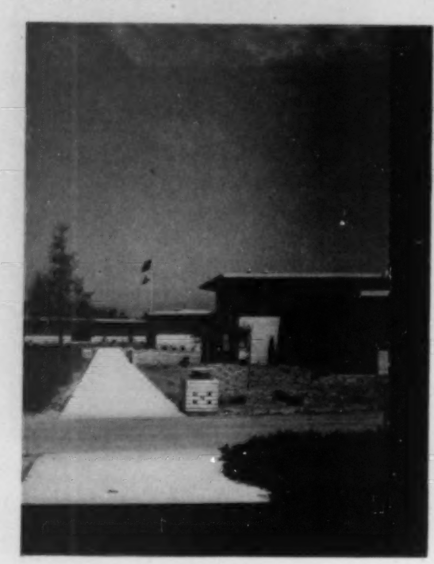
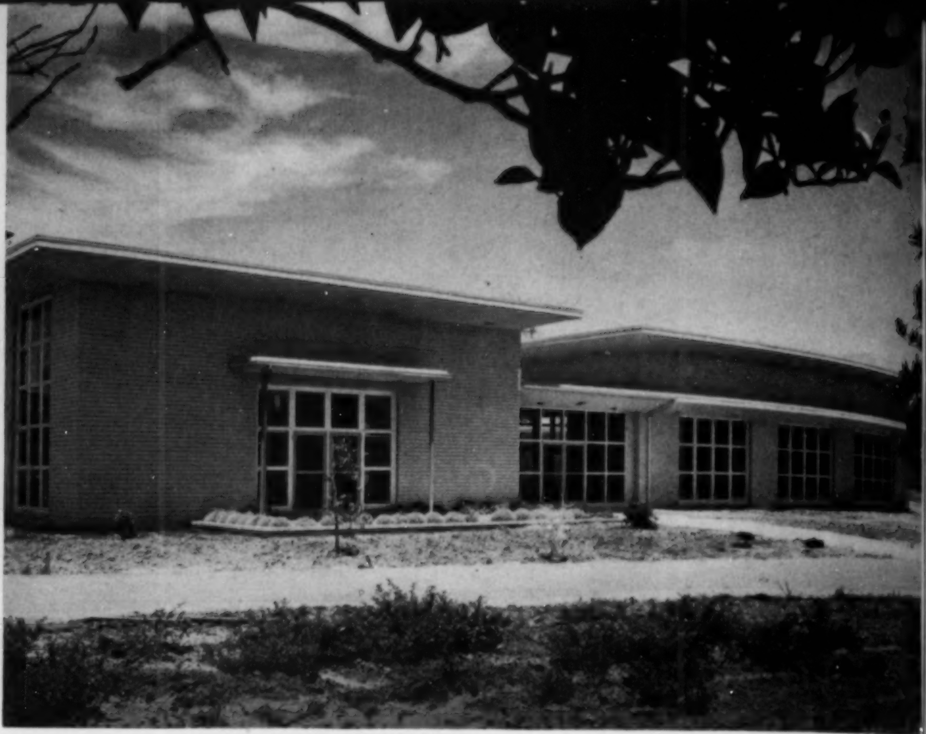
OFF
OFF
OFF
OFF
OFF
CR

Julius Shulman Photos

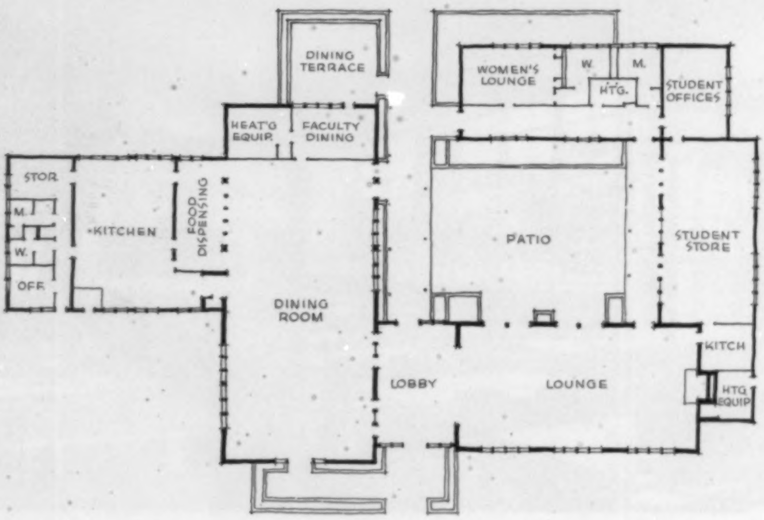


From west, looking toward Administration Building

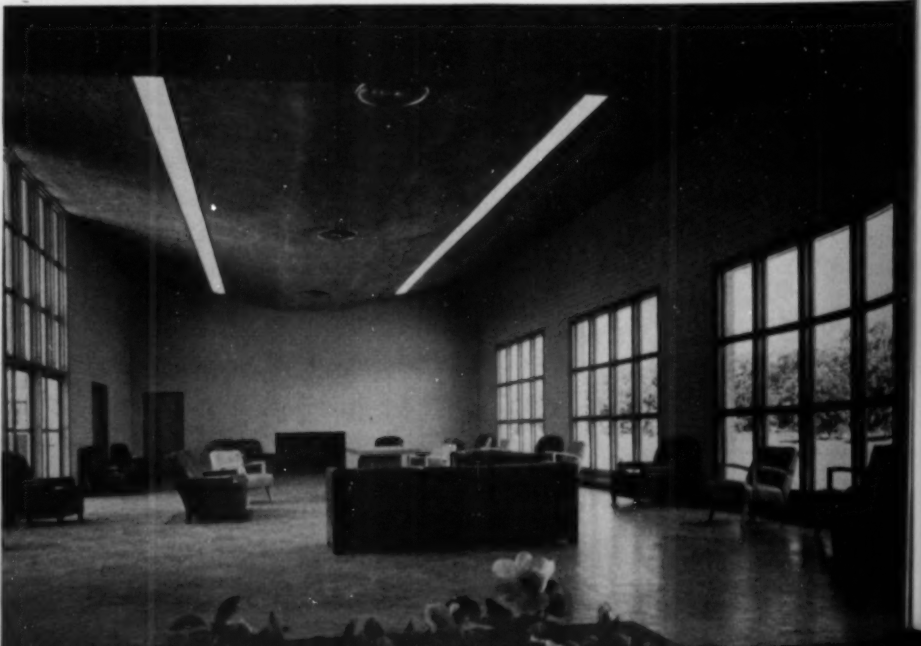


From south

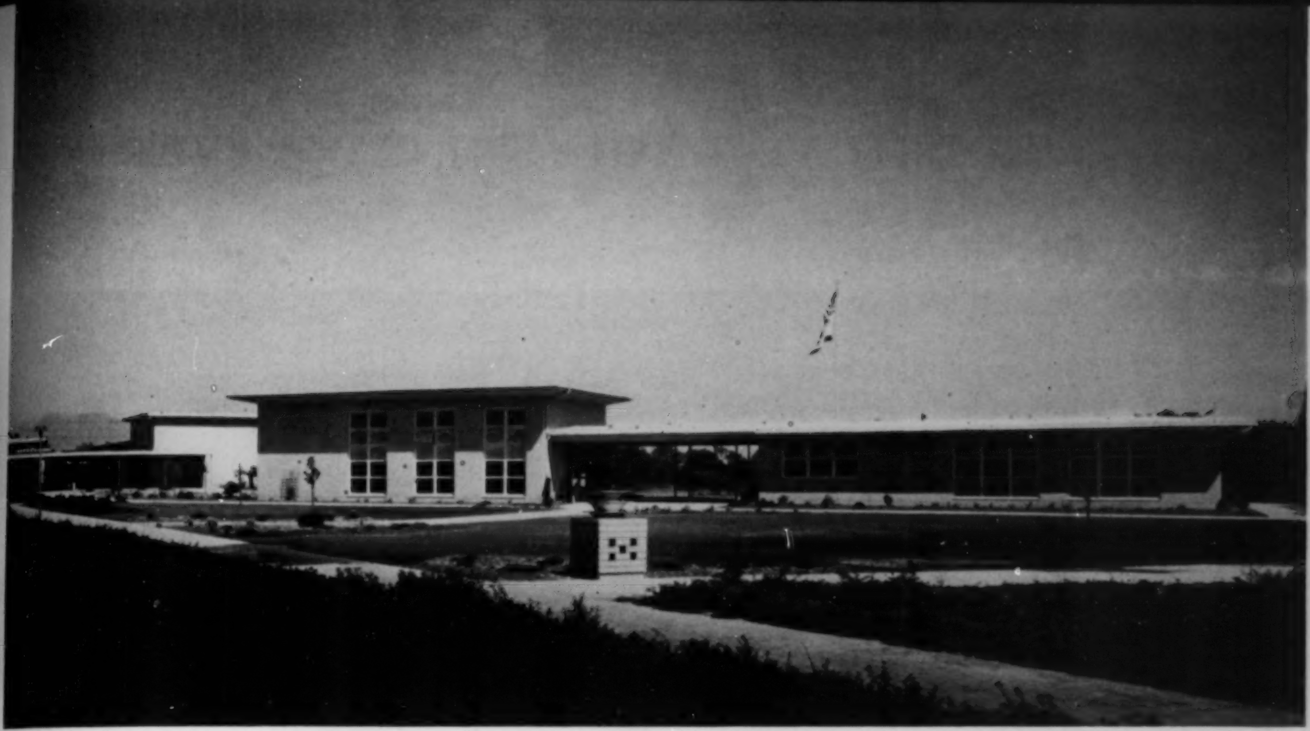
CAFETERIA AND STUDENTS' UNION


DINING TERRACE
WOMEN'S LOUNGE
W.
M.
HTG.
STUDENT OFFICES
HEAT'G EQUIP.
FACULTY DINING
STOR.
M.
W.
OFF.
KITCHEN
FOOD DISPENSING
PATIO
STUDENT STORE
DINING ROOM
KITCH
LOBBY
LOUNGE
HTG EQUIP

Patio from northwest corner

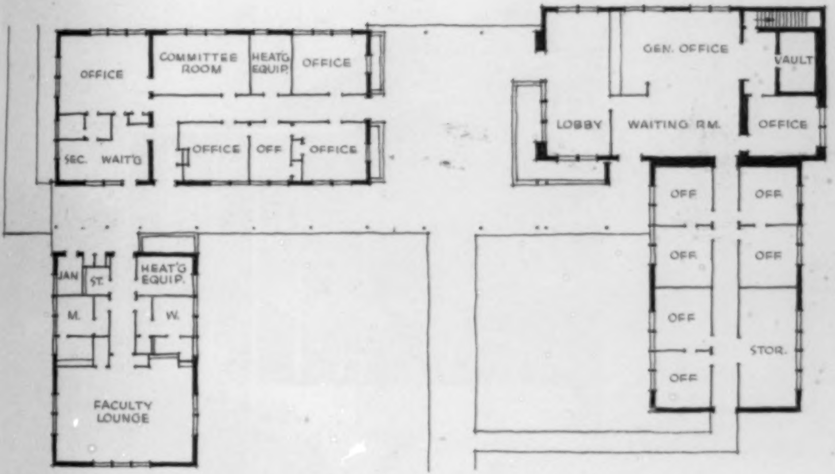


The Union, like all other buildings on the campus, has its various activity areas well separated, yet closely integrated: note in plan above the relationship of lounge (right) to lobby, dining room and student store. Lighting here and in Administration Building is recessed fluorescent; in classrooms, incandescent concentric. All floors are asphalt tile over cement slab, all ceilings have been acoustically treated



From north

ADMINISTRATION BUILDING


OFFICE
COMMITTEE ROOM
HEAT'G EQUIP.
OFFICE
SEC.
WAIT'G
OFFICE
OFF
OFFICE
JAN
ST.
HEAT'G EQUIP.
M.
W.
FACULTY LOUNGE
LOBBY
GEN. OFFICE
VAULT
WAITING RM.
OFFICE
OFF
OFF
OFF
OFF
OFF
OFF
STOR.

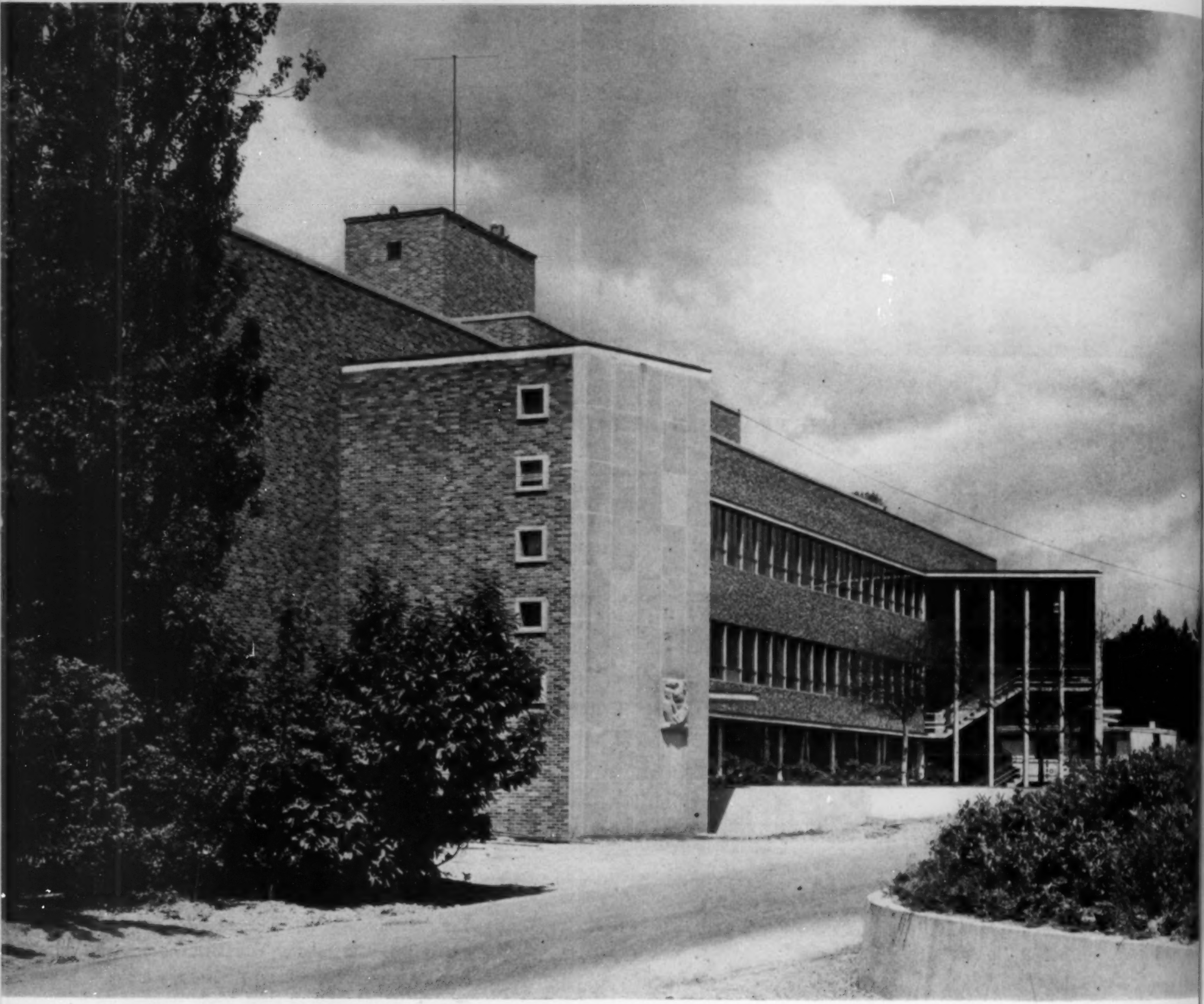
The Administration Building is the only one in the group with interior corridors, necessary here to connect the offices. Above: the lobby, looking north; door at right leads to waiting room and general office. Faculty lounge is handy to offices, but occupies separate wing

STUDENT LOCKERS

Most ingenious solution to traffic congestion problem was provision of "open-air" skylighted locker area. Students unanimously approve

ELECTRICAL ENGINEERING BUILDING

Chas. R. Pearson Photos

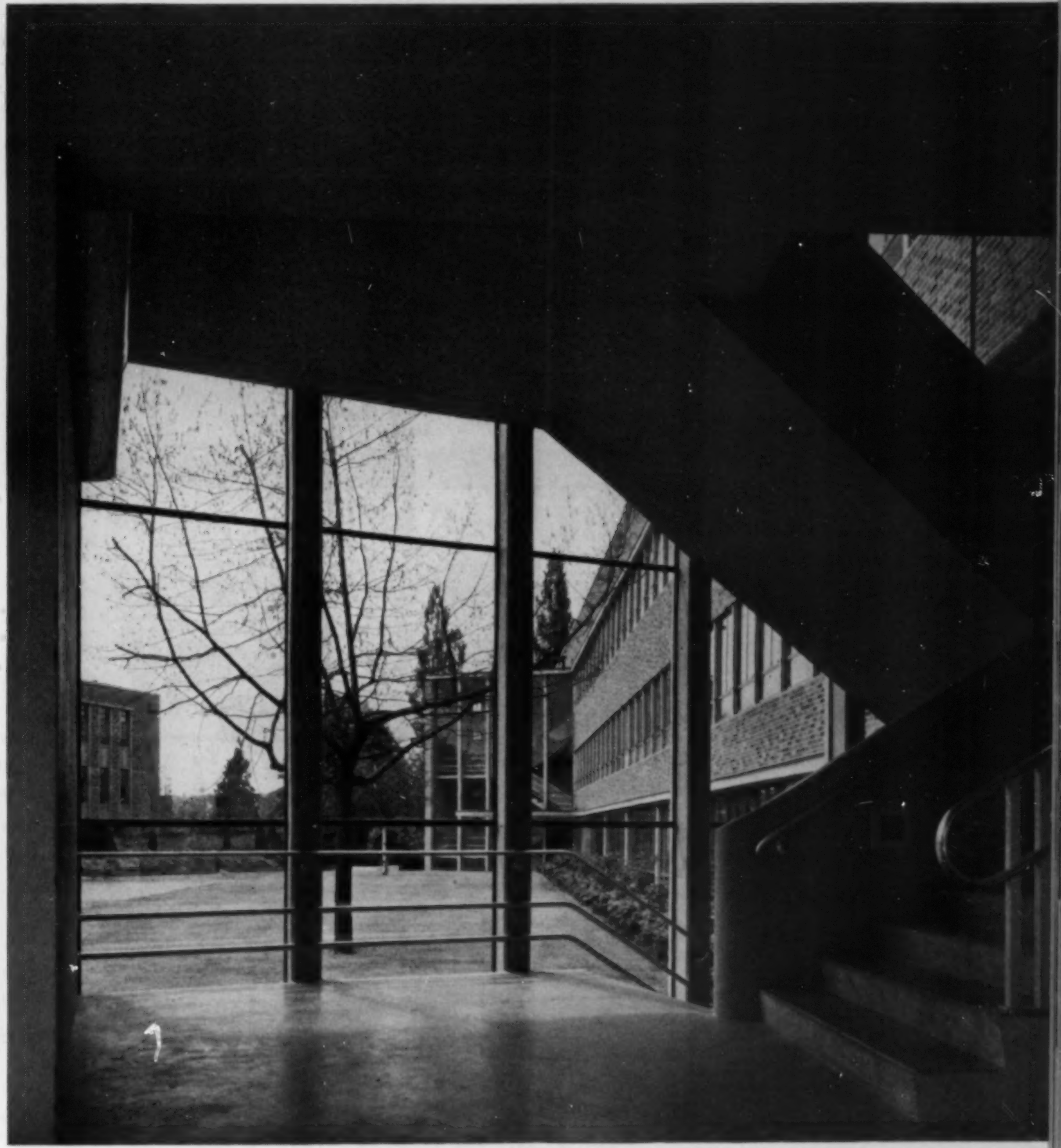


Paul Thiry, Architect

John Paul Jones, Supervising Architect

An electrical engineering laboratory is one of those campus buildings housing quite diverse activities. They range from quiet classrooms where the sprouting "EE's" use their slide rules on some fairly profound problems to huge rooms full of motor-generator sets for laboratory tests. In between are various shops and lighter lab functions, also instructors' offices. The visual expression of it all is particularly well handled in the building for University of Washington EE's. The note of

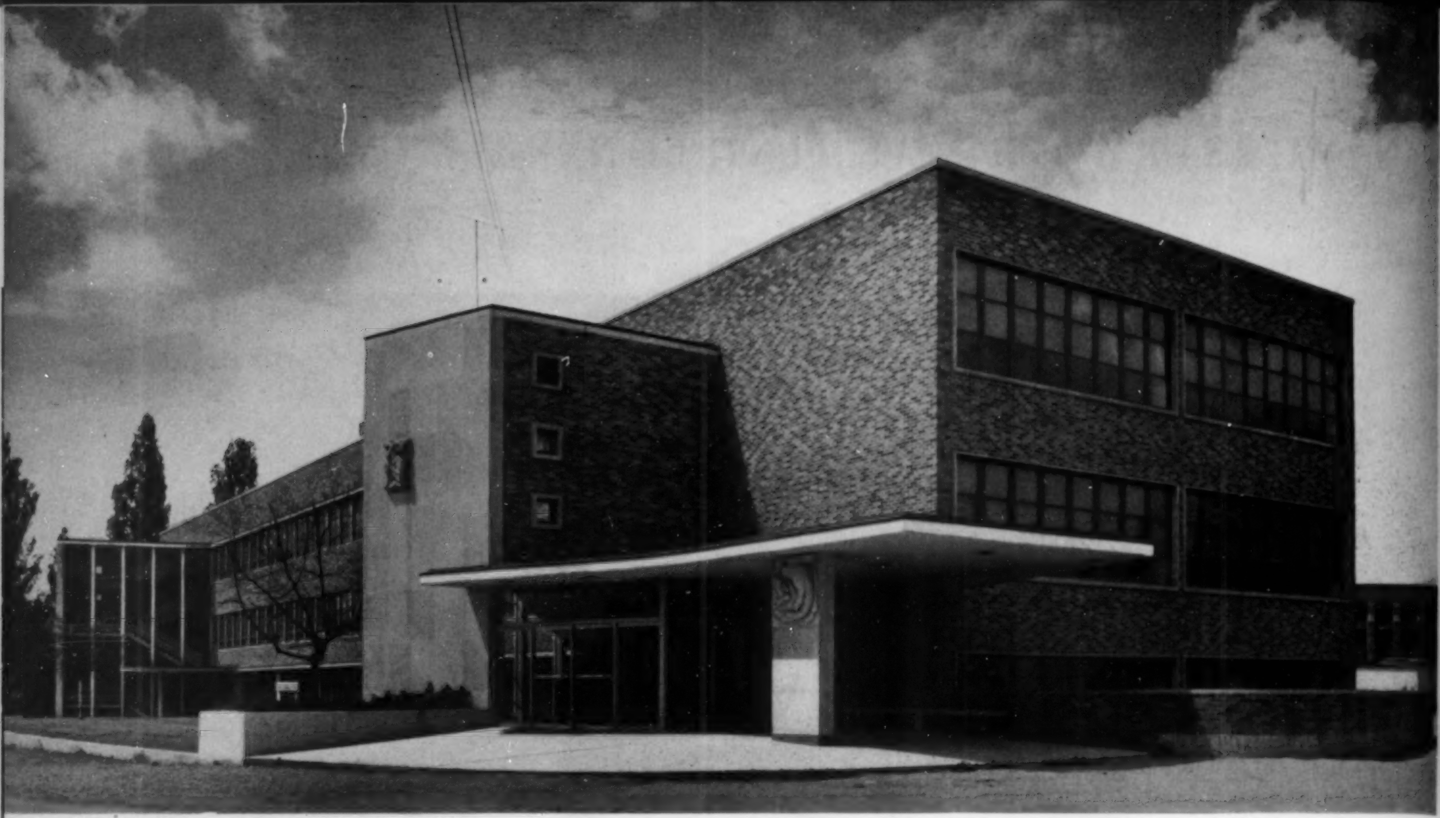
UNIVERSITY OF WASHINGTON, *Seattle, Wash.*



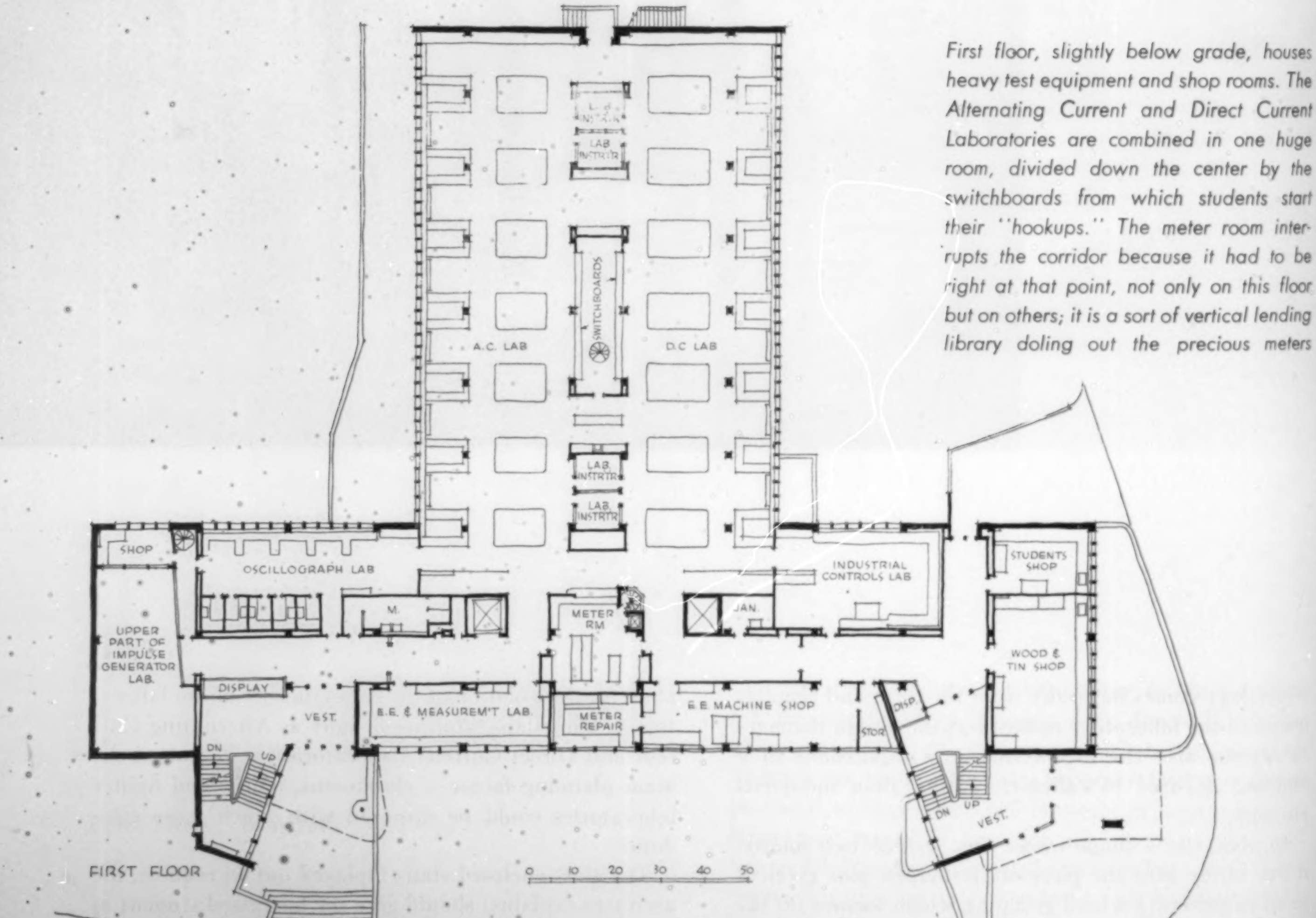
technology comes naturally from the form and requirements of the laboratory rooms, but the design manages to express also the aspirations and inspirations of a building devoted to collegiate rather than industrial pursuits.

In plan, the T shape works very well on two counts: it fits nicely into the piece-of-pie-shaped plot given it in an engineering school grouping which focuses on the Frosh Pond; and the upright of the T provides a logical place for the isolation of the larger, noisier motor laboratories. These labs, known officially as Alternating Current and Direct Current Laboratories, were indeed the main planning factor — classrooms, offices and lighter laboratories could be disposed with much more freedom.

The glass-enclosed stairs (splayed out on request, the architect explains) should give the harrassed student at least some visual change of pace between classes.



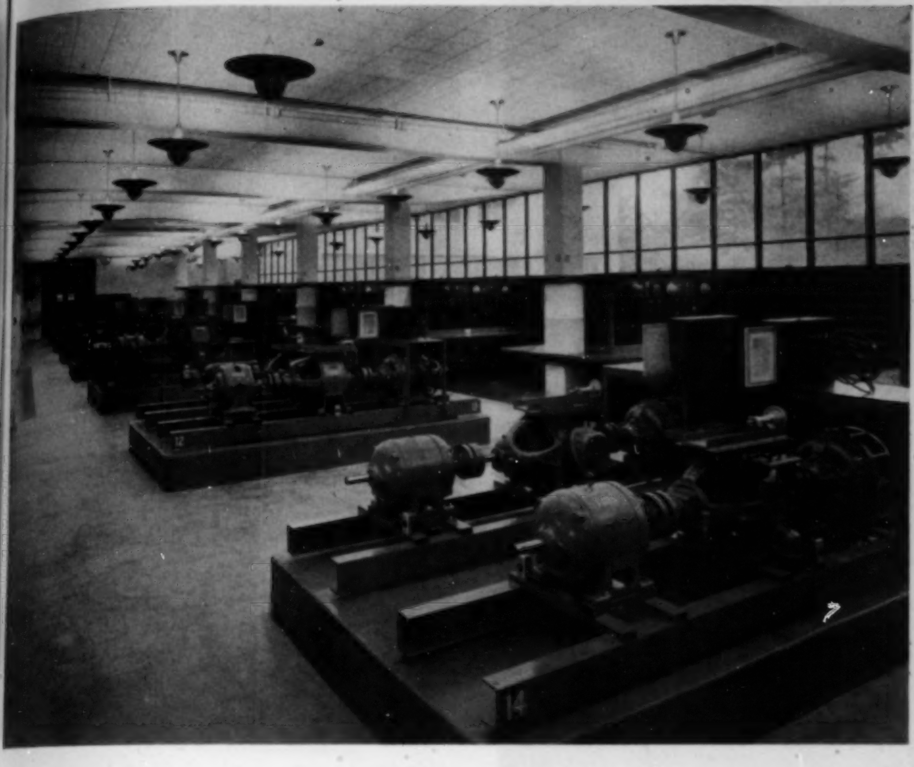
Chas. R. Pearson Photos

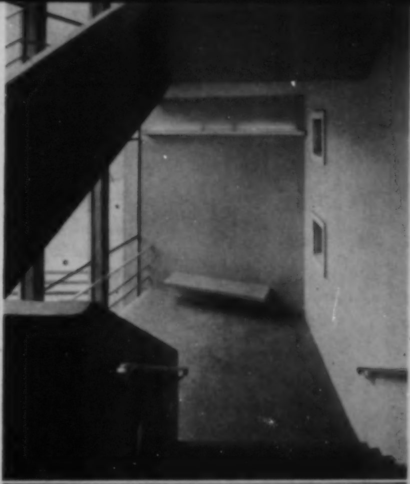


A.C. LAB
SWITCHBOARDS
D.C LAB
LAB INSTRTR
SHOP
OSCILLOGRAPH LAB
M.
METER RM
JAN.
INDUSTRIAL CONTROLS LAB
STUDENTS SHOP
UPPER PART OF IMPULSE GENERATOR LAB.
DISPLAY
VEST.
E.E. & MEASUREM'T LAB
METER REPAIR
E.E. MACHINE SHOP
DISP.
STOR
WOOD & TIN SHOP
DN
UP
0
10
20
30
40
50

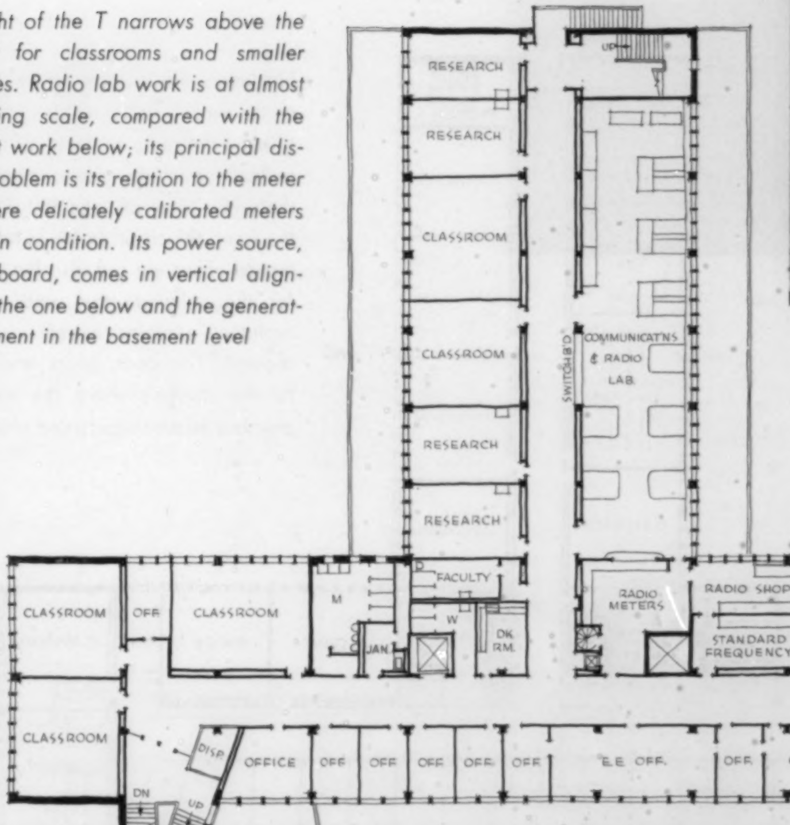
FIRST FLOOR

First floor, slightly below grade, houses heavy test equipment and shop rooms. The Alternating Current and Direct Current Laboratories are combined in one huge room, divided down the center by the switchboards from which students start their "hookups." The meter room interrupts the corridor because it had to be right at that point, not only on this floor but on others; it is a sort of vertical lending library doling out the precious meters

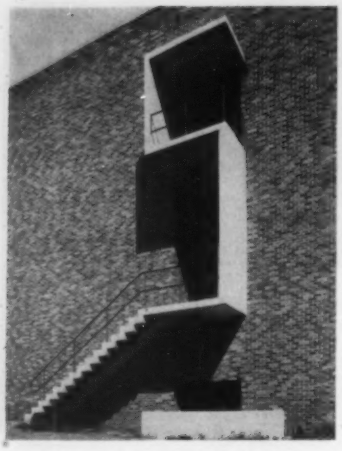




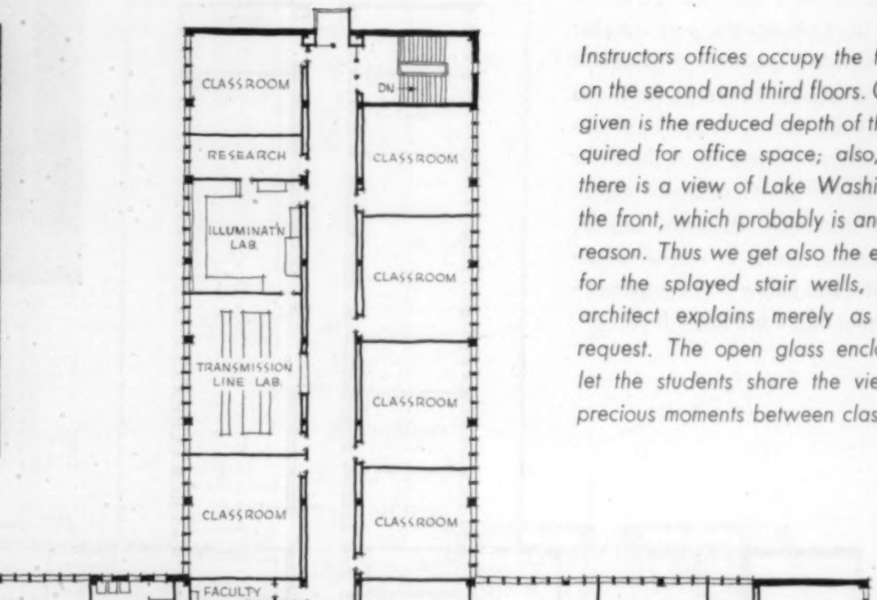
The upright of the T narrows above the first floor for classrooms and smaller laboratories. Radio lab work is at almost watchmaking scale, compared with the power test work below; its principal disposition problem is its relation to the meter room, where delicately calibrated meters are kept in condition. Its power source, the switchboard, comes in vertical alignment with the one below and the generating equipment in the basement level


UP
RESEARCH
RESEARCH
CLASSROOM
CLASSROOM
RESEARCH
RESEARCH
SWITCHBD
COMMUNICATNS & RADIO LAB
CLASSROOM
OFF
CLASSROOM
M
JAN
FACULTY
W
DK RM.
RADIO METERS
RADIO SHOP
STANDARD FREQUENCY
CLASSROOM
OFF
STUDY ROOM
CLASSROOM
DISP
OFFICE
OFF
OFF
OFF
OFF
OFF
E.E. OFF.
OFF
CONF
DISP
DN
UP
UP
DN

SECOND FLOOR



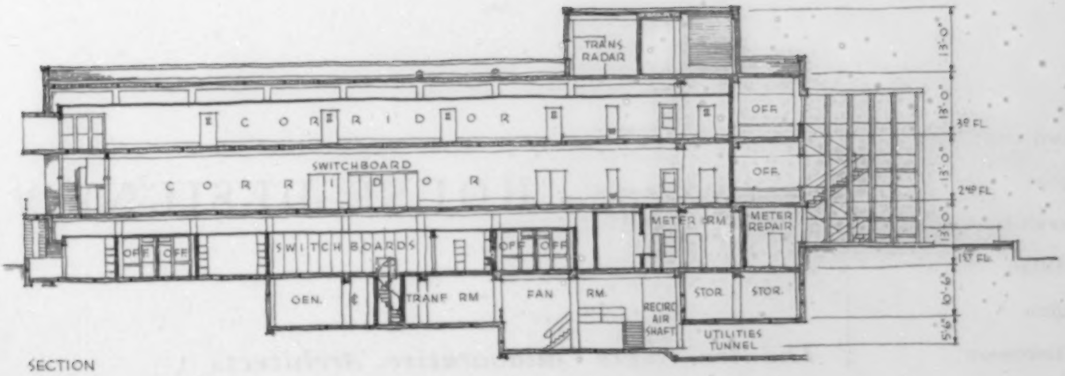
Instructors offices occupy the front space on the second and third floors. One reason given is the reduced depth of the bays required for office space; also, however, there is a view of Lake Washington from the front, which probably is another good reason. Thus we get also the explanation for the splayed stair wells, which the architect explains merely as a faculty request. The open glass enclosed stairs let the students share the view for the precious moments between classes


CLASSROOM
DN
RESEARCH
CLASSROOM
ILLUMINAT'N LAB.
CLASSROOM
TRANSMISSION LINE LAB.
CLASSROOM
CLASSROOM
CLASSROOM
FACULTY
CLASSROOM
OFF
CLASSROOM
M.
JAN
DK RM.
CLASSROOM
CLASSROOM
OFFICE
OFF
CLASSROOM
CLASSROOM
DISP.
OFFICES
DISP.
CLASSROOM
DN
DN

THIRD FLOOR

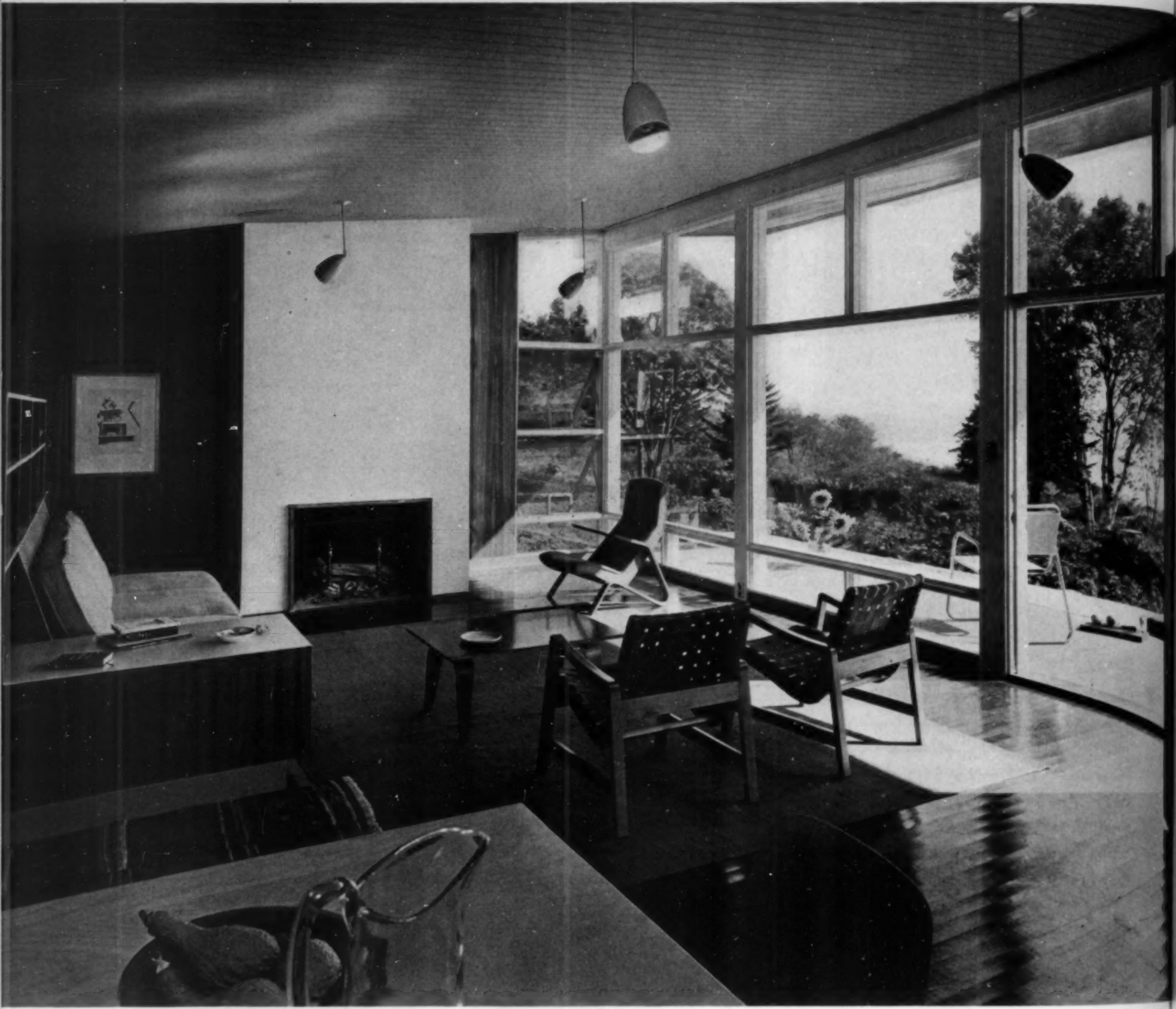
Chas. R. Pearson Photos

The students get their real chance at the contemplation of scenery when on duty on the roof (section below), which is used for various radio, radar and antennae studies. A small penthouse story provides adjacent enclosed space for this radio work


TRANS. RADAR
CORRIDOR
OFF.
3RD FL.
SWITCHBOARD
CORRIDOR
OFF.
2ND FL.
METER RM
METER REPAIR
OFF
OFF
SWITCH BOARDS
OFF
OFF
1ST FL.
GEN.
TRANF RM
FAN RM.
RECIRC AIR SHAFT
STOR.
STOR.
UTILITIES TUNNEL
13'-0"
13'-0"
13'-0"
13'-0"
10'-6"
5'-6"

SECTION

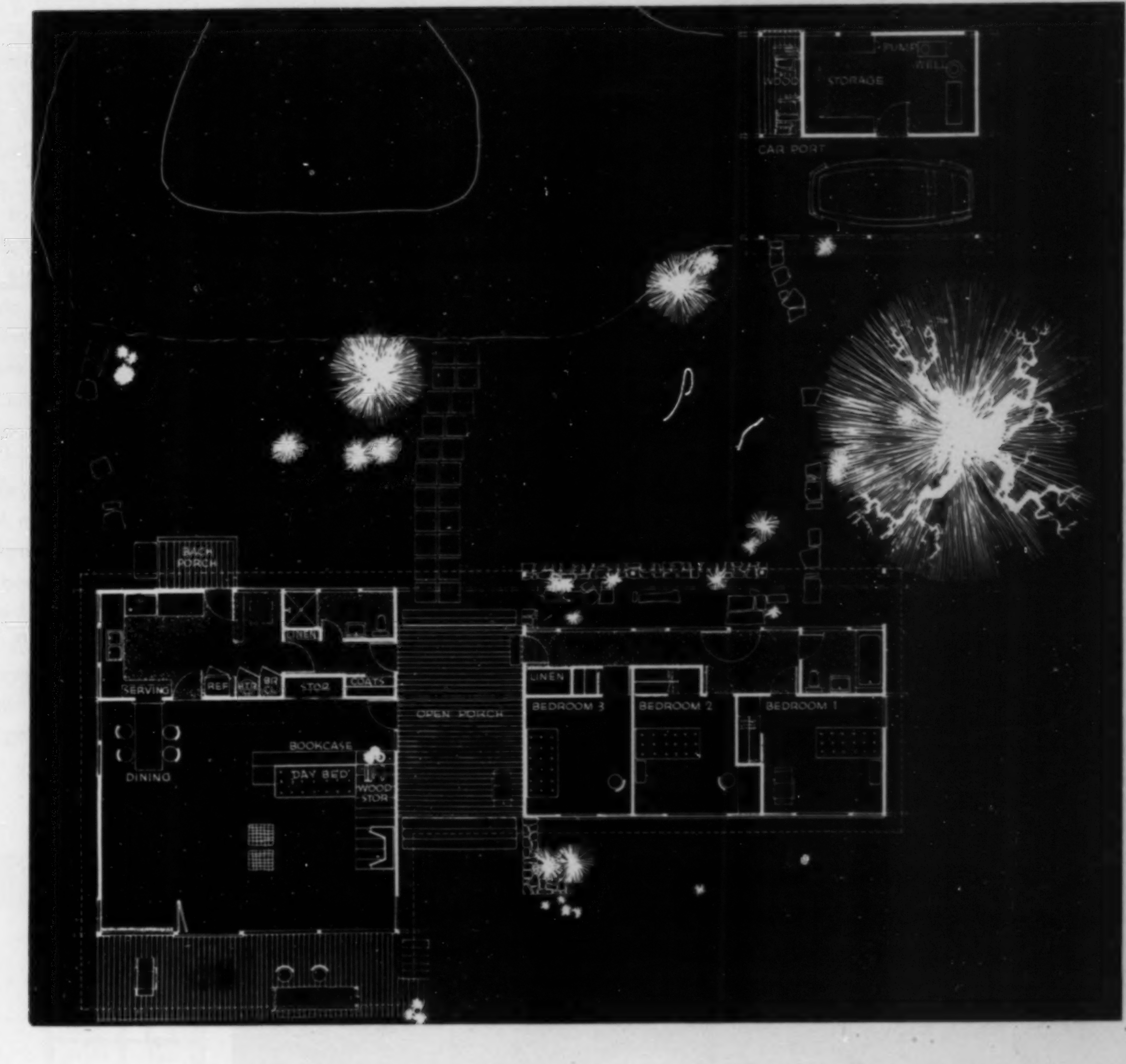
Damora



Jean and Norman Fletcher
Walter Gropius
John and Sarah Harkness
Robert McMillan
Louis McMillen
Benjamin Thompson

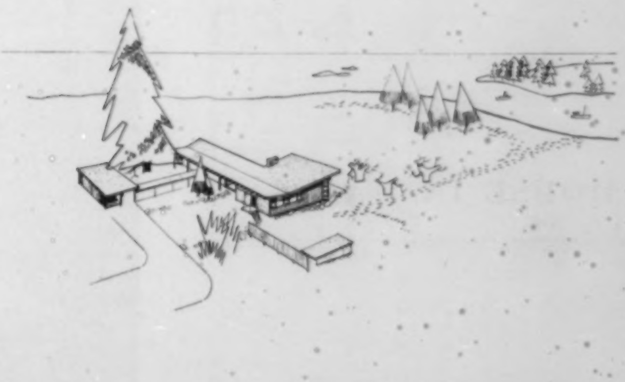
HOUSE DESIGNED FOR

The Architects Collaborative, Architects


PUMP
WELL
WOOD
STORAGE
CAR PORT
BACK PORCH
LINEN
SERVING
REF
KIT
BR CL
STOR
COATS
OPEN PORCH
LINEN
BEDROOM 3
BEDROOM 2
BEDROOM 1
BOOKCASE
DAY BED
WOOD STOR
DINING

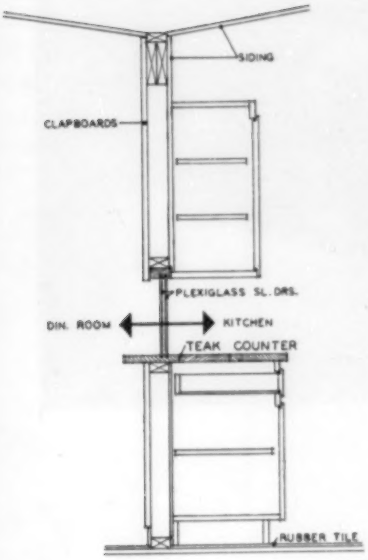
THE rugged north coast of Maine affords violent contrasts of weather, trees, rocks and sea. This vacation home, simple and direct in composition, has a strength which echoes its background. Its roof overhangs on all sides for protection from snow and driving rain. House and carport are built around a huge spruce which first attracts attention as you arrive; but then through the open porch separating the bedroom wing from the rest of the house you see the Atlantic Ocean.

THE MAINE COAST

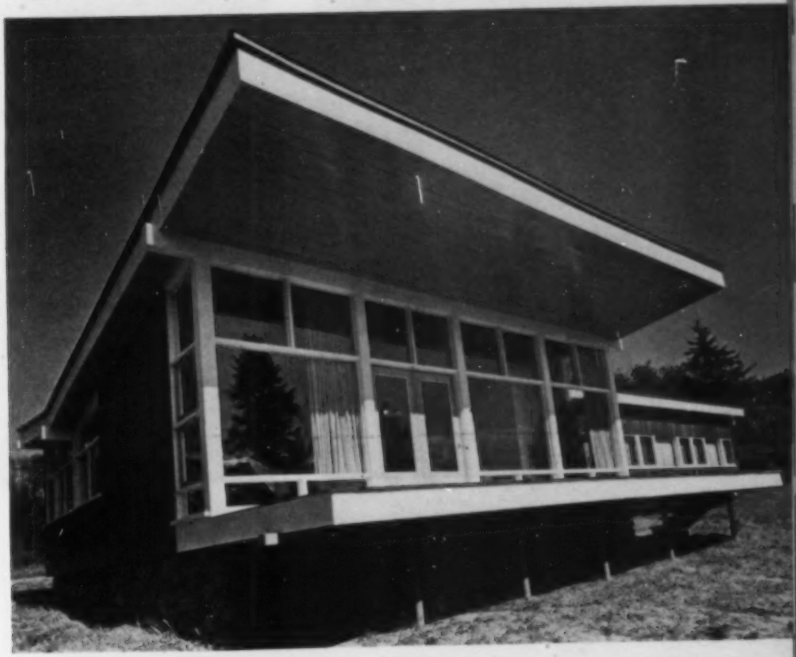


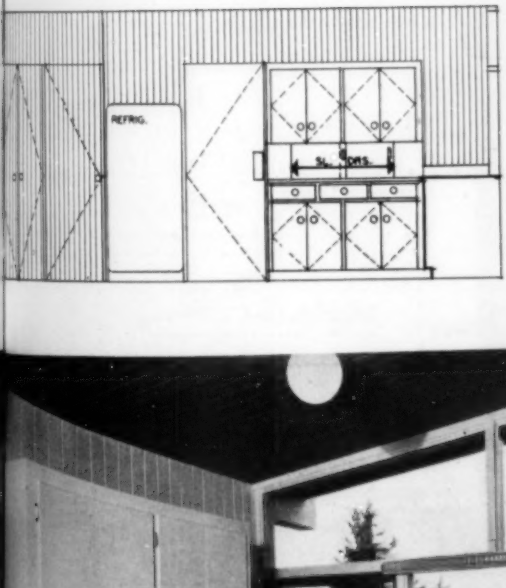
Of the two units of which the house is composed, the main portion, comprising living room, dining room, kitchen and utility space, may be used year 'round. This area has a heat-circulating fireplace and provision is made for a future heating plant. Living in a vacation house, particularly a small one, may become disagreeable in poor weather when there is no place to go; hence the wide open living room with its glass walls, and the sheltered porch adjoining. Construction is of simple wood frame with exterior finished in pine boarding and redwood siding. Roof and side walls are insulated; living-dining room has interior walls of figured red gum plywood. All doors are flush plywood. Floors are of beech and cork-and-rubber composition. Originally there was to be little if any interior trim; but local builders found it difficult to cut and fit rough framing members with sufficient accuracy

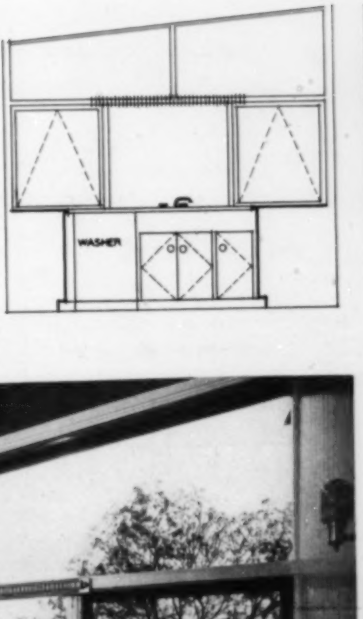
HOUSE IN MAINE

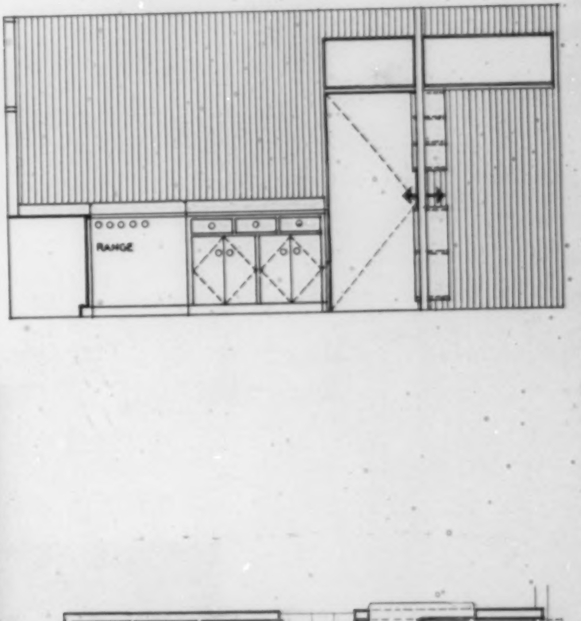

SIDING
CLAPBOARDS
PLEXIGLASS SL. DRS.
DIN. ROOM
KITCHEN
TEAK COUNTER
RUBBER TILE

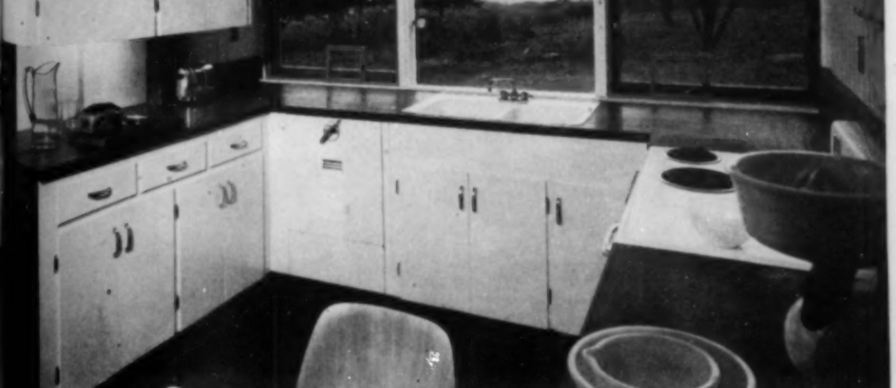
Damora

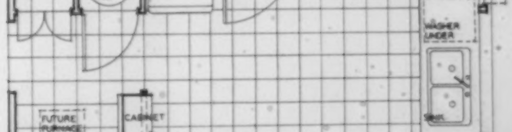


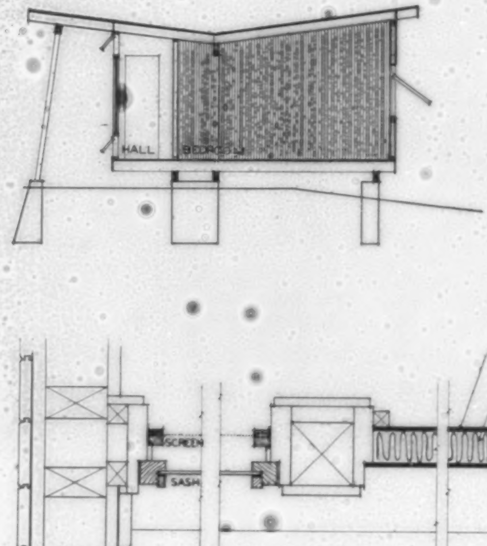

REFRIG.
SL. DRS.


WASHER

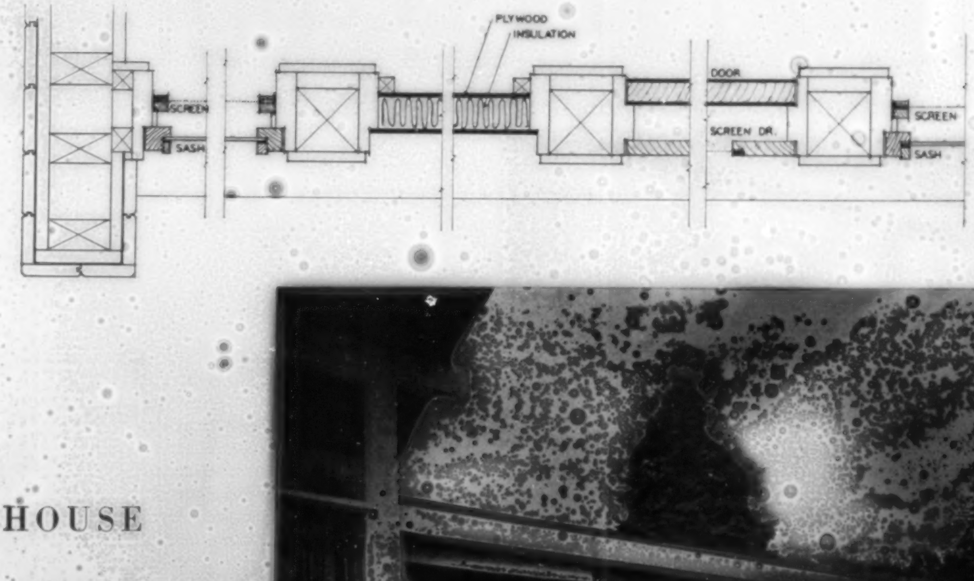

RANGE




CLOSET
HW
REFRIG.
SL. DOORS
TEAK COUNTER
WASHER UNDER
SINK
FUTURE FURNACE
CABINET
RANGE

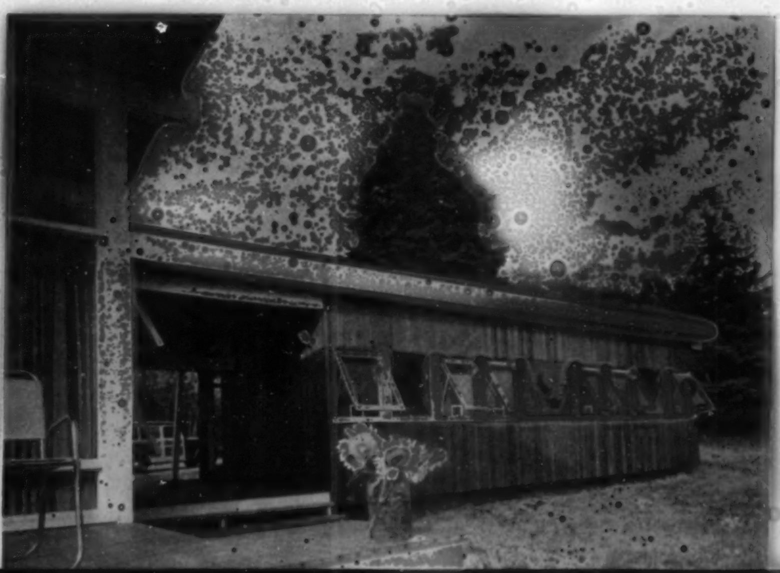

HALL
BEDROOM

The bedroom wing of the house, unheated, is intended only for summer use and is built upon posts. Like the other wing it is fully insulated and the combination of verticals, horizontals, slanting columns as well as walls and openings is very carefully studied

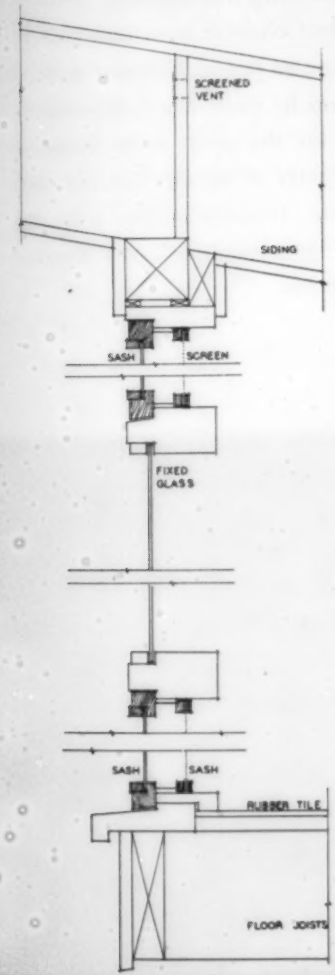

PLYWOOD
INSULATION
SCREEN
SASH
DOOR
SCREEN DR.
SCREEN
SASH

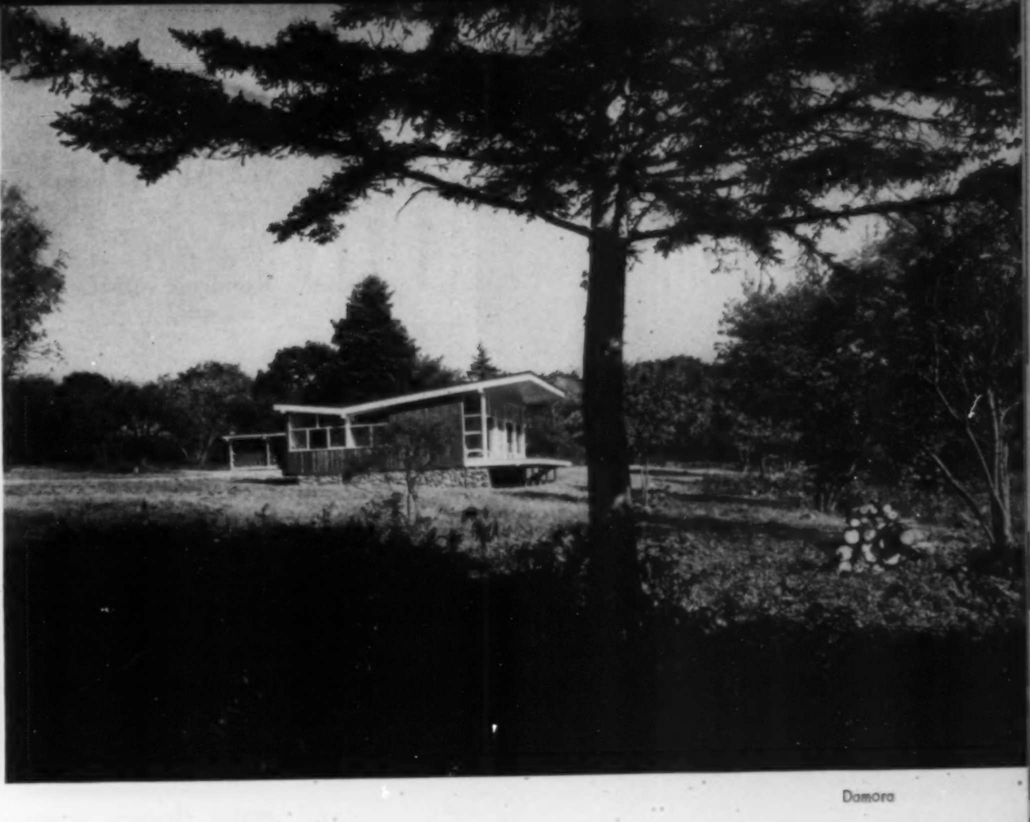
HOUSE

IN MAINE

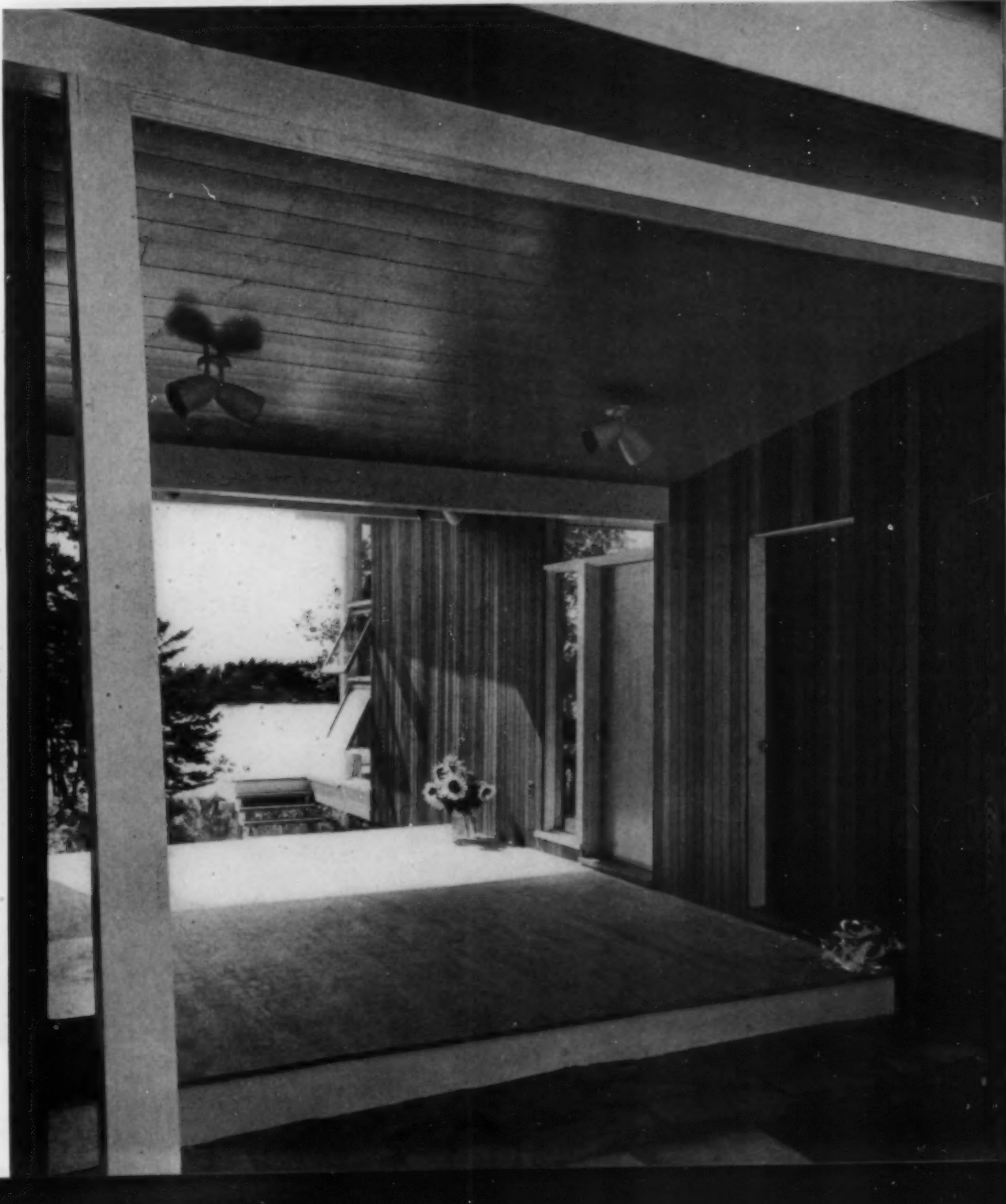


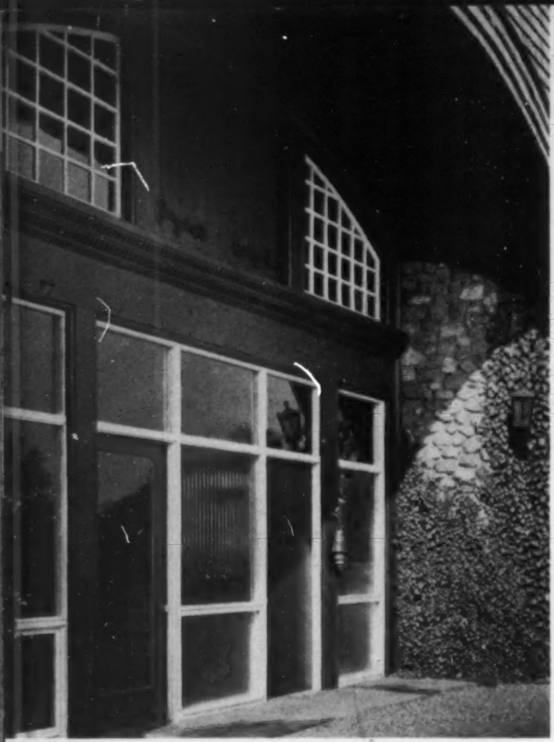
Within the limits of this small house there is a variety of size, shape and finish. In the bedroom hall you can see outdoors constantly, and where the glass goes to the floor the foreground comes into view. Succeeding bedrooms each have two walls of plywood — the first in birch, the second in walnut and the third again in birch. The remaining two walls and ceilings of all bedrooms are white painted siding with window sills high enough to give a sense of enclosure and privacy


SCREENED VENT
SIDING
SASH
SCREEN
FIXED GLASS
SASH
SASH
RUBBER TILE
FLOOR JOISTS



Damora





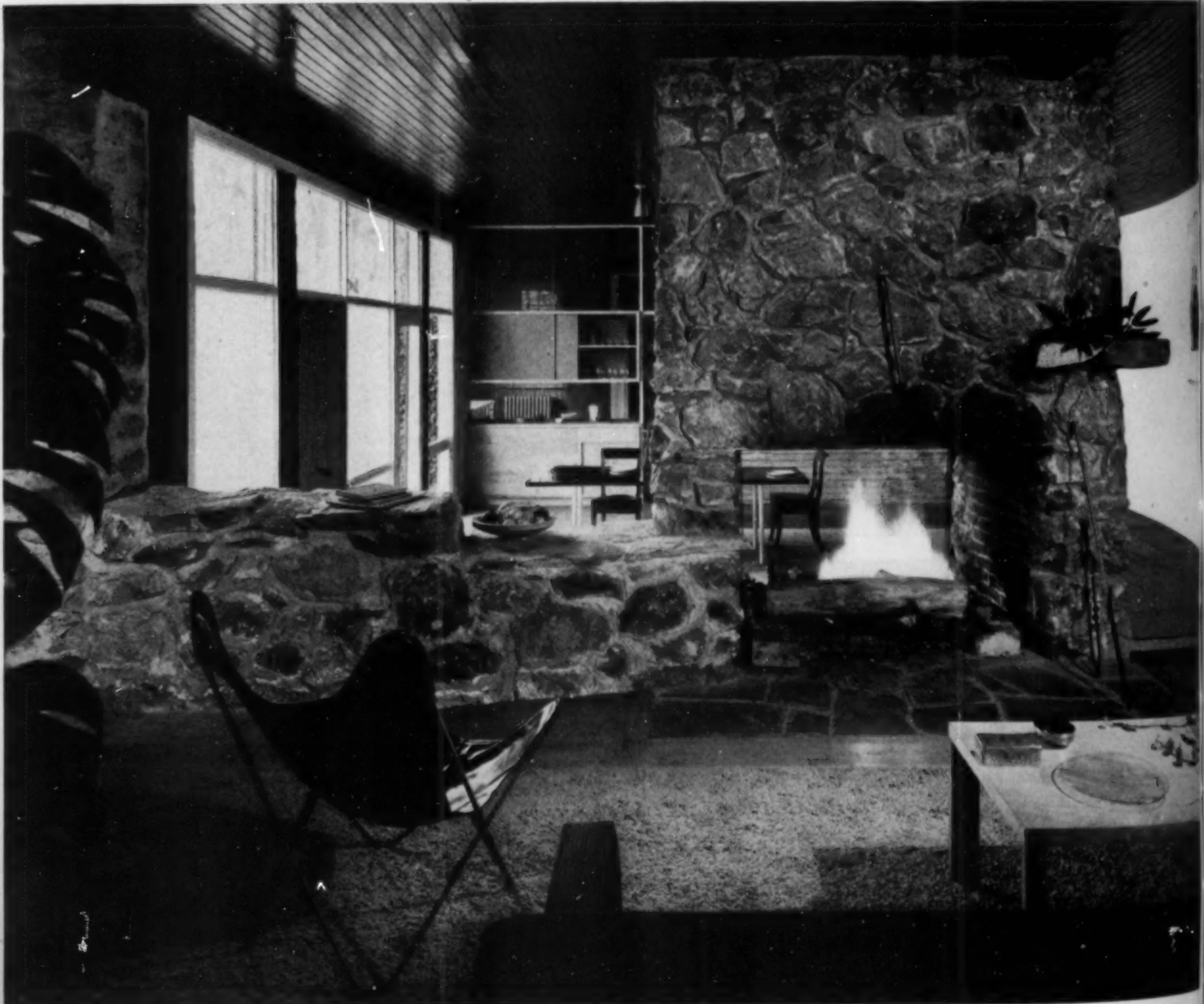
Damora

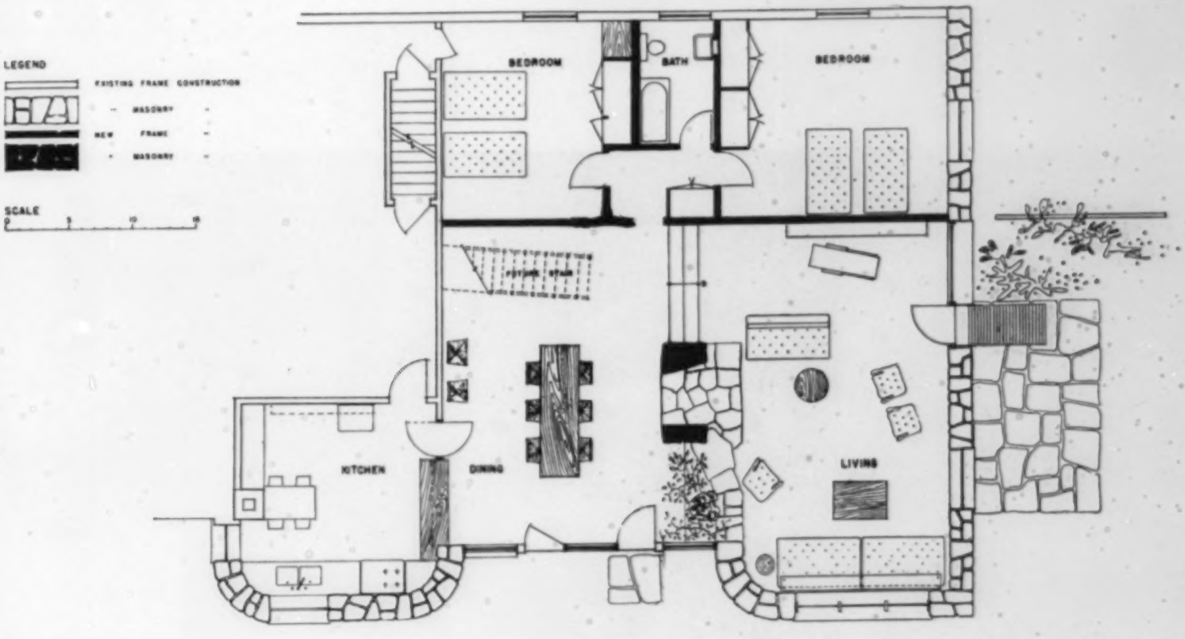
BARN REMODELED FOR RESIDENCE

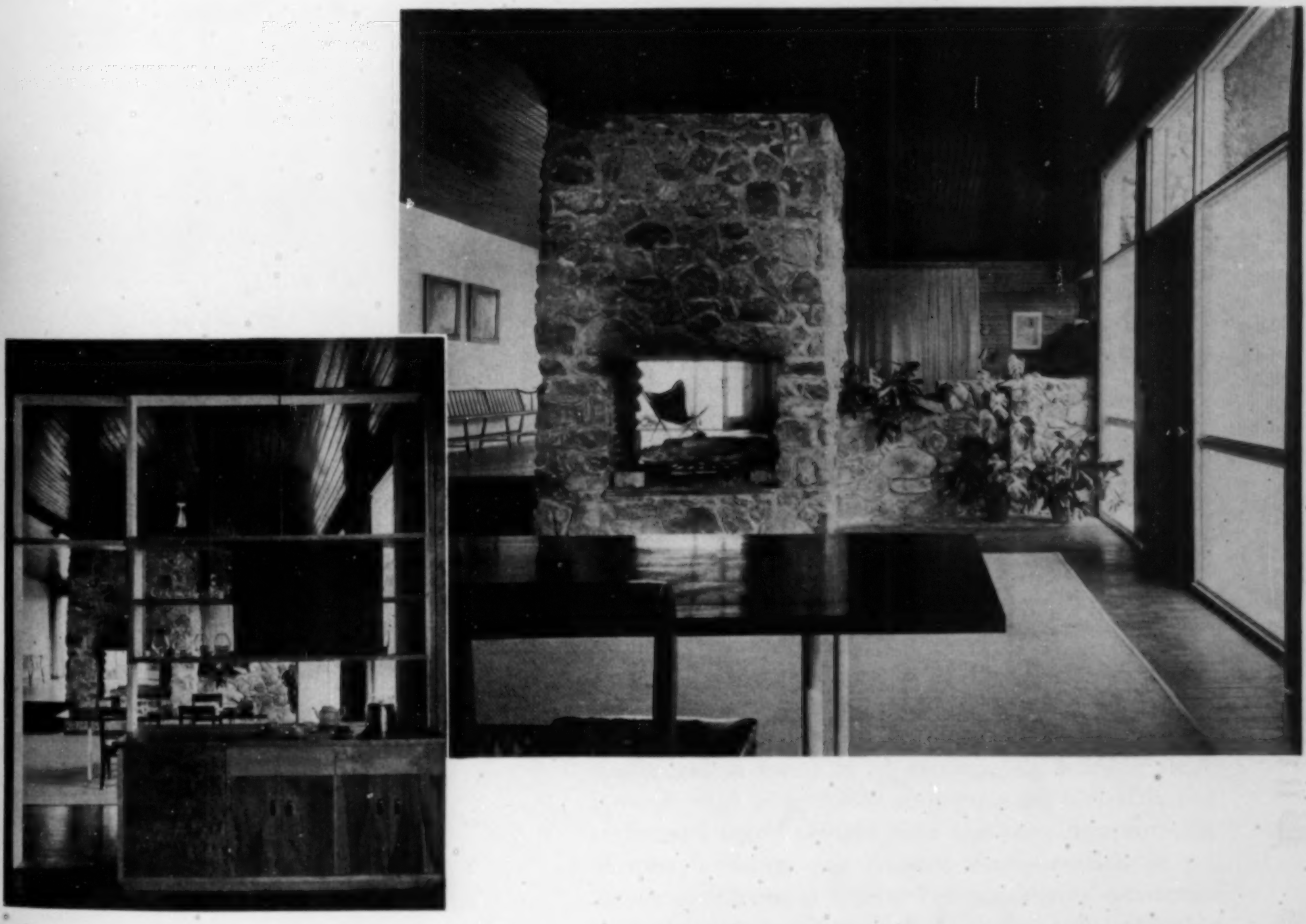
Residence of Mr. and Mrs. David Plummer, Cohasset, Mass.

Hugh Stubbins, Jr., Architect

Surprisingly little construction work was required to transform a portion of this sturdy Cohasset barn into the delightful residence shown on these two pages. Exterior walls of stone and shingle, fir ceilings and fir walls were all perfectly suited to the purpose. Except for the great stone fireplace which adds so much to the character of the interior, the only major changes necessary for the transformation were the addition of several partitions (see plan opposite), new floors of hard pine, and new lighting fixtures.

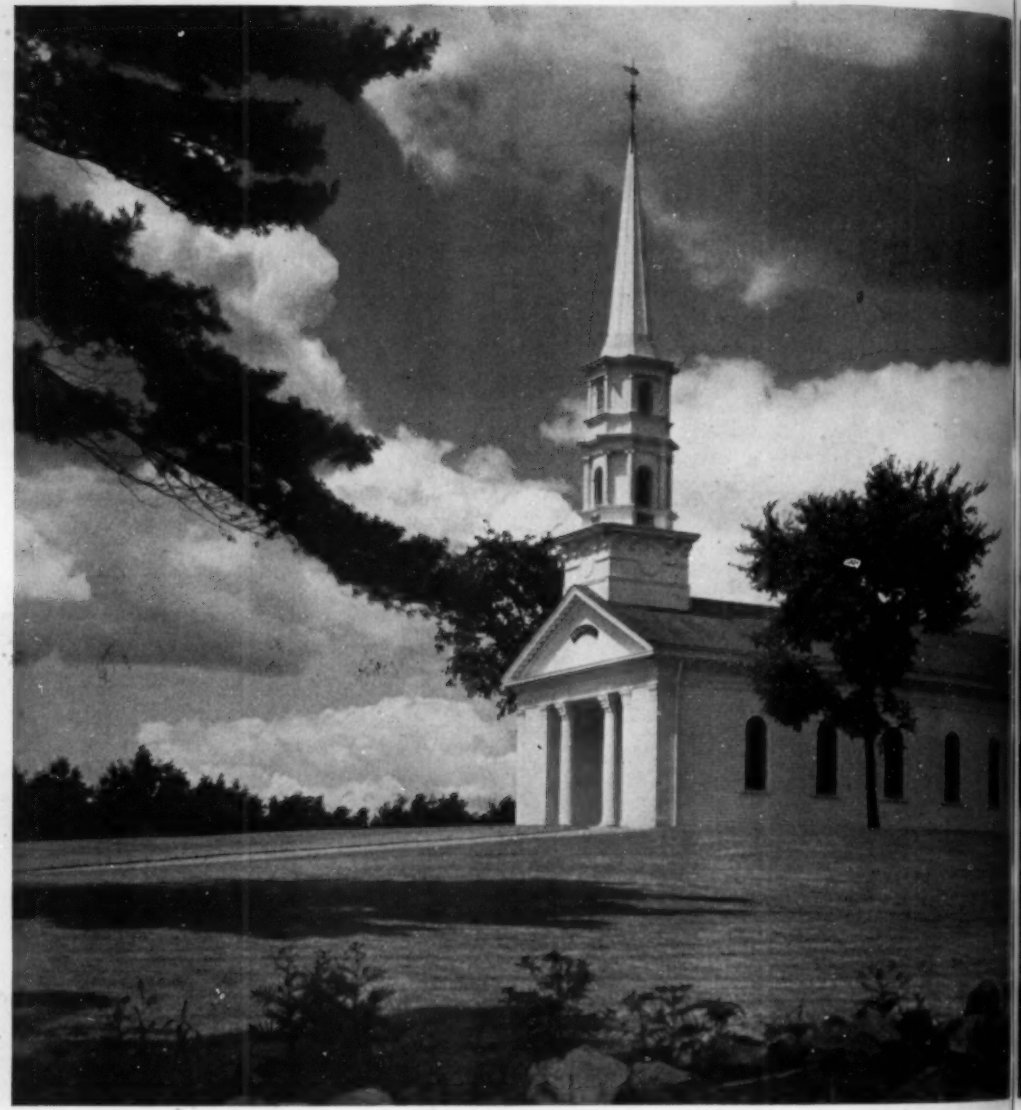



LEGEND
EXISTING FRAME CONSTRUCTION
" MASONRY "
NEW FRAME "
" MASONRY "
SCALE
0
5
10
15
BEDROOM
BATH
BEDROOM
FUTURE STAIR
KITCHEN
DINING
LIVING

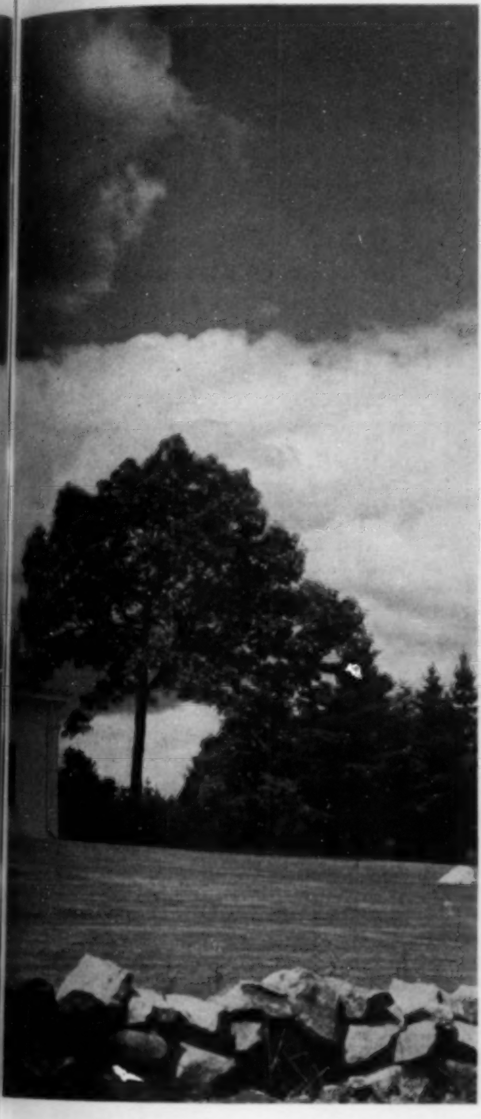


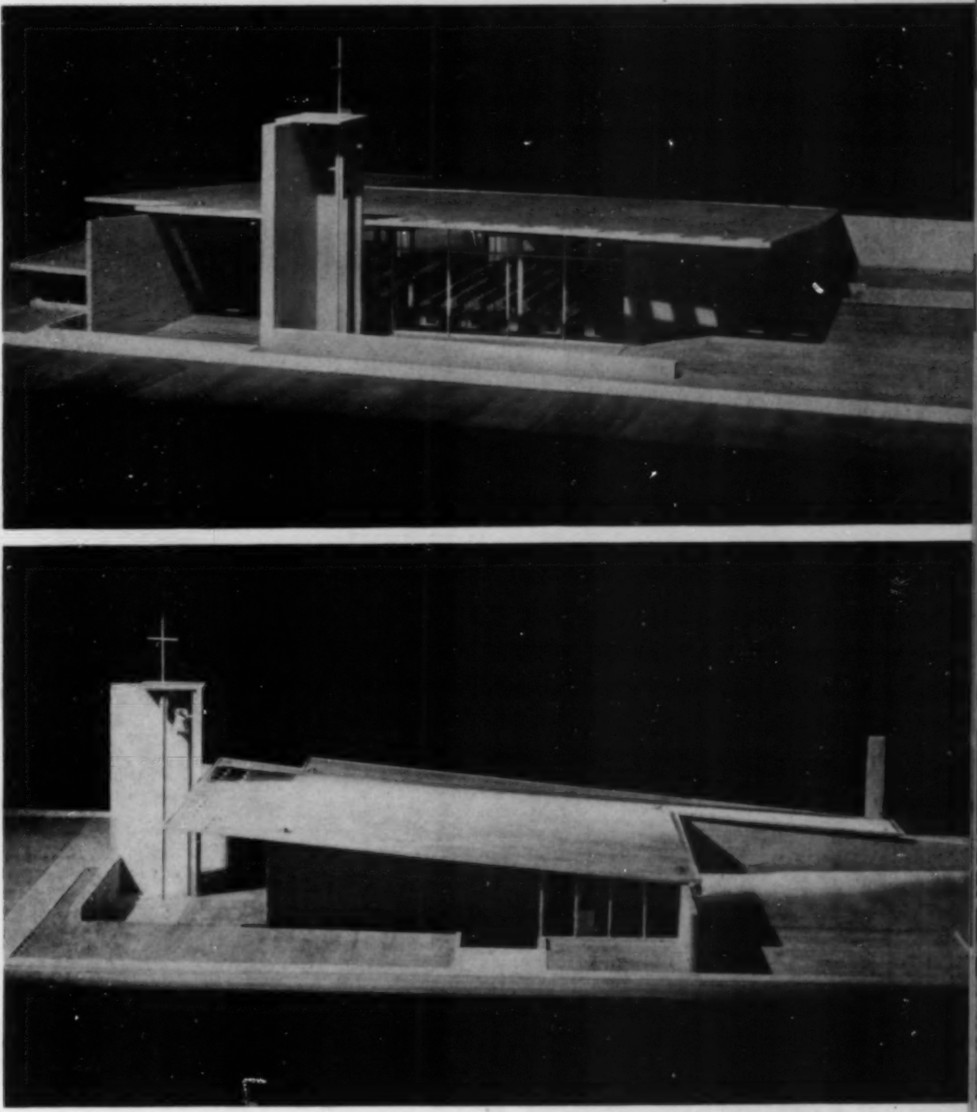
The converted barn overlooks the ocean from a high elevation, and has a distant view although somewhat limited in panorama. The interior is dominated by the huge stone fireplace which serves as an effective partition between living and dining rooms. The exterior was permitted to retain its original character in all essential respects, as indicated by the skillful modification of the main entrance shown opposite

Religious Buildings: *Architectural Record's Building Types Study Number 156*



The Slow Evolution of Religious



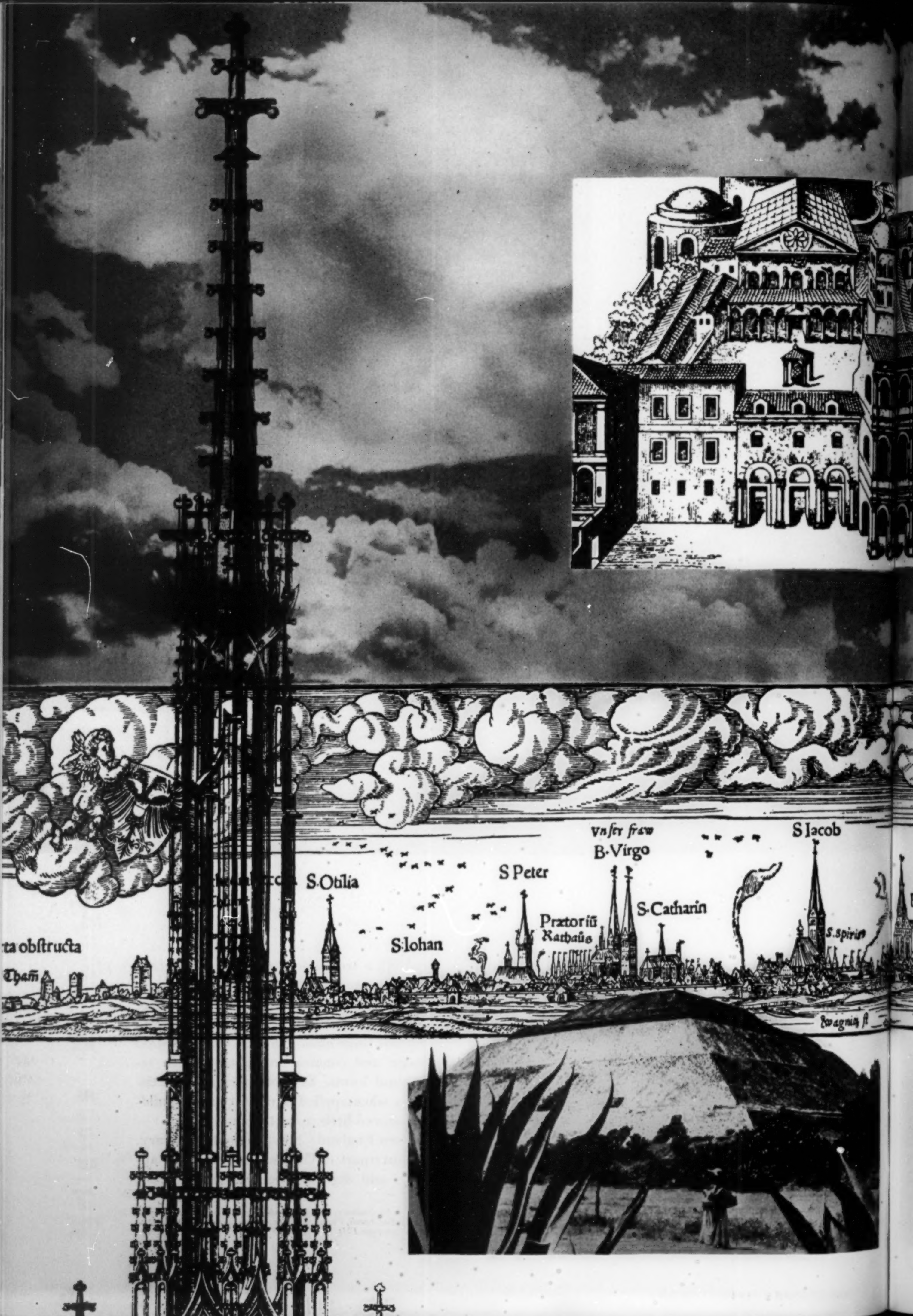


Architecture

We are building a tremendous number of churches and synagogues today. Many of these are strongly traditional in form; in an encouraging number there is an attempt to integrate contemporary materials and technics; a very few come close to a true interpretation of today's design and construction potentials in religious architectural forms. Yet considering our artistry and ingenuity when applied to other types of buildings we have improved little upon the remote past.

Not that the New England Church in South Sudbury, Mass., or its counterpart in Ohio or Oregon, lacks appropriate beauty and dignity; the original, at least,

Illustrations: Left, Church, So. Sudbury, Mass. Photo by Samuel Chamberlain. Right, wood model of First Methodist Church, Plainfield, Iowa; Schweikher & Elting, Archts.; photos by Country Studio (see page 124).


ta obstructa
Tham
S.Otilia
S.Iohan
S Peter
Prætoriū
Rathaūs
Vnser frew
B.Virgo
S.Catharin
S Iacob
S.Spirit

Religious Buildings

Lübeck
Burgũ
Hospital ulcerosorũ
Blater haus
Trab fl.

Exaltation expressed architecturally: Mayans built places of worship atop pyramids; Greeks used the Acropolis. But old St. Peter's in Rome, begun under Constantine (306–337 A.D.), impressed through its mass and intricacy; not until, much later, the Gothic flèche arrived did church spires dominate urban medieval horizons. In today's American city the spire is dwarfed. (Photos: Pyramid of the Sun, Teothuacan, courtesy American Museum of Natural History; Trinity Church seen from New York's Wall Street, Wide World)

is one of the country's finest early efforts at design and building. Rather, today should traditional forms maintain so strong a hold?

The atmosphere with which the good religious building surrounds the acts of faith and worship is of course essential. We are accustomed to certain architectural forms as conveyors of religious atmosphere. Is it something in these forms themselves that conveys the needed emotion? Perhaps a brief resume of their origins will help.

Primarily, historic religious architecture has always been a series of wholly rational solutions of very real problems, paramount being the necessity of sheltering a large number of people, the congregation. The building itself has undergone many changes; during the Middle Ages, for instance, it became very high, thus expressing the loftiness of religious concepts as opposed to more earthy practicalities. Earlier, the Egyptians made their temples big, both widespread and tall; the Greeks on the Mediterranean and the Mayans in the Americas both exalted their temples by building atop eminences. The earlier the architectural era, the more limited was technical knowledge and the more blocky were architectural shapes and ornament.

The Greek place of worship benefited from improved technical understanding; the wooden beam spanning between posts became a stone lintel supported by columns, yet the architecture retained many characteristics of wood, even to standardized carved ornament developed first for the predecessor material. Due partly to the limitations of stone, the concept of the religious building as an architectural jewel here approached full realization. The Roman arch, developing into the barrel vault, multiple and penetrating vaults, circular domes, pendentives, etc., was again primarily a means of spanning large spaces with small units of masonry. The early basilica, with wood trusses and lean-to structures flanking its central aisle, served the same purpose.

The Gothic cathedral grew naturally out of these forebears, via their massive Romanesque developments, as engineering ingenuity was applied to familiar masonry and wood construction. It came to be realized that the arch need not be circular, that forces produced by weight of structure could be concentrated upon isolated columns and counteracted by buttresses. The decorative accouterments of Gothic — stained glass, intricate carving, gold leaf — and the idea of the curtain wall between emphasized structural supports, all evolved from and remain visibly related to the problem solved by the Gothic engineer: how should one enclose a large space, for many people, built to an unusual height to express literally the concept of exaltation?

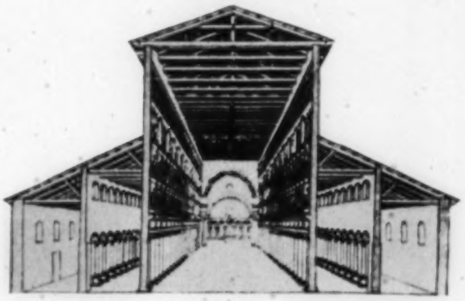
Some practical origins of religious architectural symbolism are thus evident. Excepting only such elements as the cross — in symbolic Christian ornament and as a plan determinant — and orientation to the East — characteristic of both Jewish and Christian places of worship — the architectural forms now synonymous with reverence and worship were once no more than very practical solutions of very practical problems. To say this is not to belittle. It has meant that in past great architectural eras the most sincere creative effort, the greatest degree of technical ingenuity, have always been expended upon religious structures. In the best of these historic buildings the techniques, modified and harmonized by an esthetic perception seldom equalled nowadays and realized with craftsmanship which we can hardly afford in 1949, still elicit admiration.

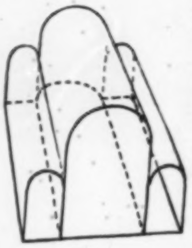
The traditional religious forms developed in circumstances which do not obtain today. Labor was plentiful and inexpensive. Materials more complex than bits of glass, some metals, and elementary mortars were not yet available. Tremendous amounts of time and money were expended on churches; few secular buildings existed which could rival them in expanse, in height, or in richness. The practical spheres of economics, politics, science, and certainly of sociology, were only beginning to produce results capable of challenging the universal appeal of theological ideas and ideals.

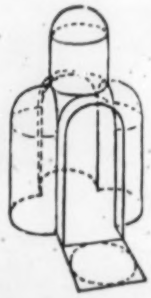
In respect to all these factors times have changed. Labor is scarce and costly; the multiplicity and complexity of building materials are great and bewildering. How successfully does the church compete with the school — to pick a single type of building from many — for the building dollar? The religious structure is actually dwarfed by the office building, the railroad station, the sports arena, the governmental bureau, the Pentagon. We have endlessly multiplied the Caracallan Baths, the Colosseum, the palace and the aqueduct of other days. We make a vast number of things, and to do so we have evolved factory buildings whose like has not heretofore been seen. Among so many types of buildings, so busy and exciting, it is no wonder that to many a human being the church or the synagogue tends to become just another building. That it does not completely lose identity is one proof of its validity.

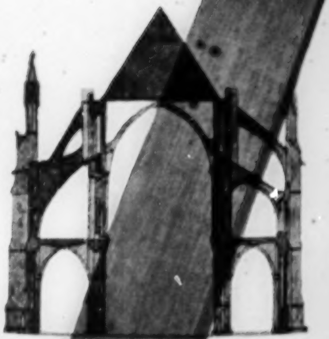
To make the point quickly and perhaps in an oversimplified way, neither architects nor engineers, clergy nor church laity have more than begun to understand the application to the religious building of modern technology. Since the day of the Greek, Roman, Byzantine, Gothic or Renaissance church we have produced and become familiar with many a revolutionary building material: steel and other metals; processed wood; reinforced concrete; substitutes for conventional masonry such as cast concrete and tile; plastics. We have developed mechanical means for controlling heat, cold and noise, airborne moisture and infection. These are revolutionary materials and equipment not because they are

(*Text continued on page 128*)

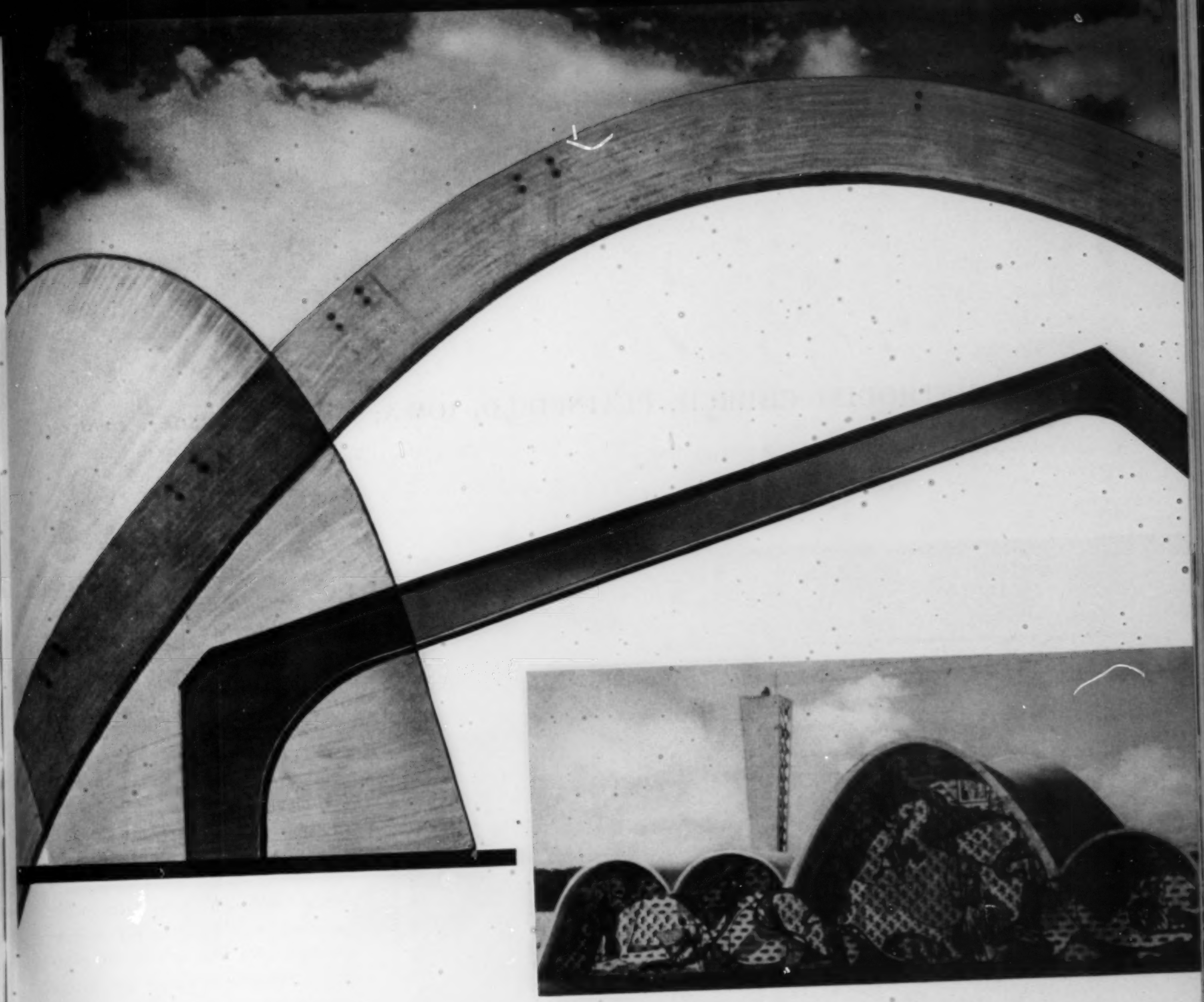


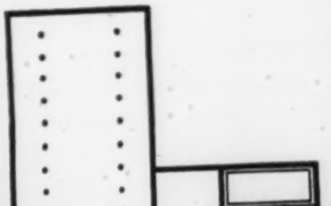


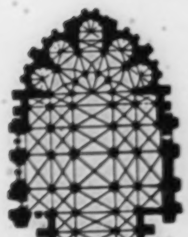


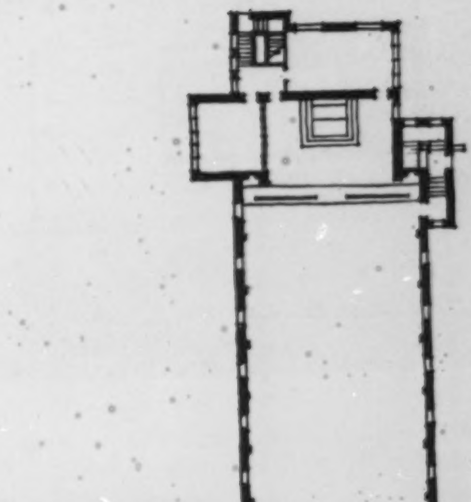


Top, construction of Old St. Peter's, Rome; wood roof framing on masonry. Next, succeeding masonry vault forms: barrel; penetrating and domed barrel; and Gothic, in Ely Cathedral





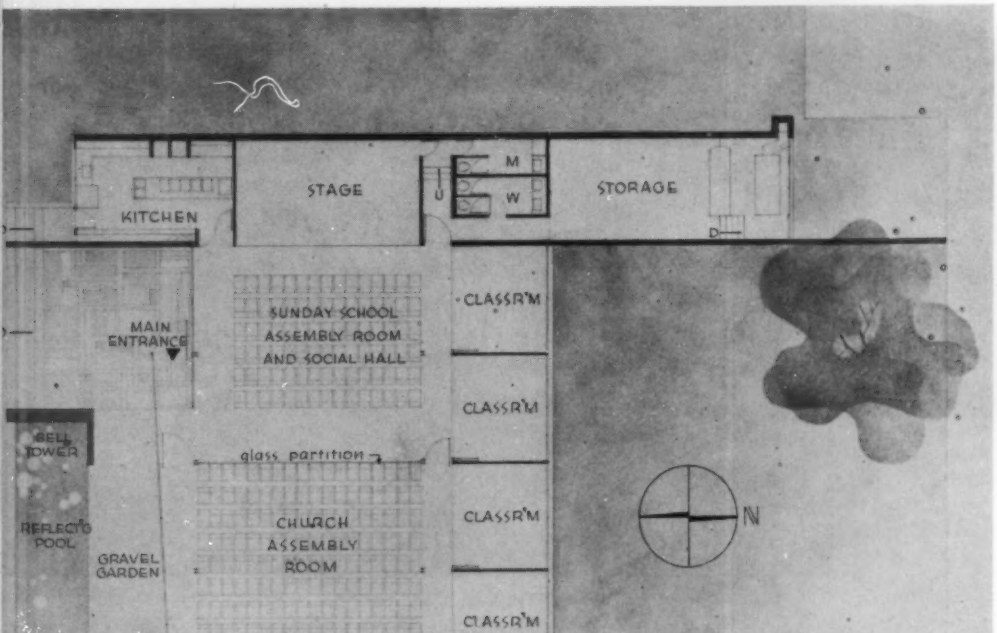




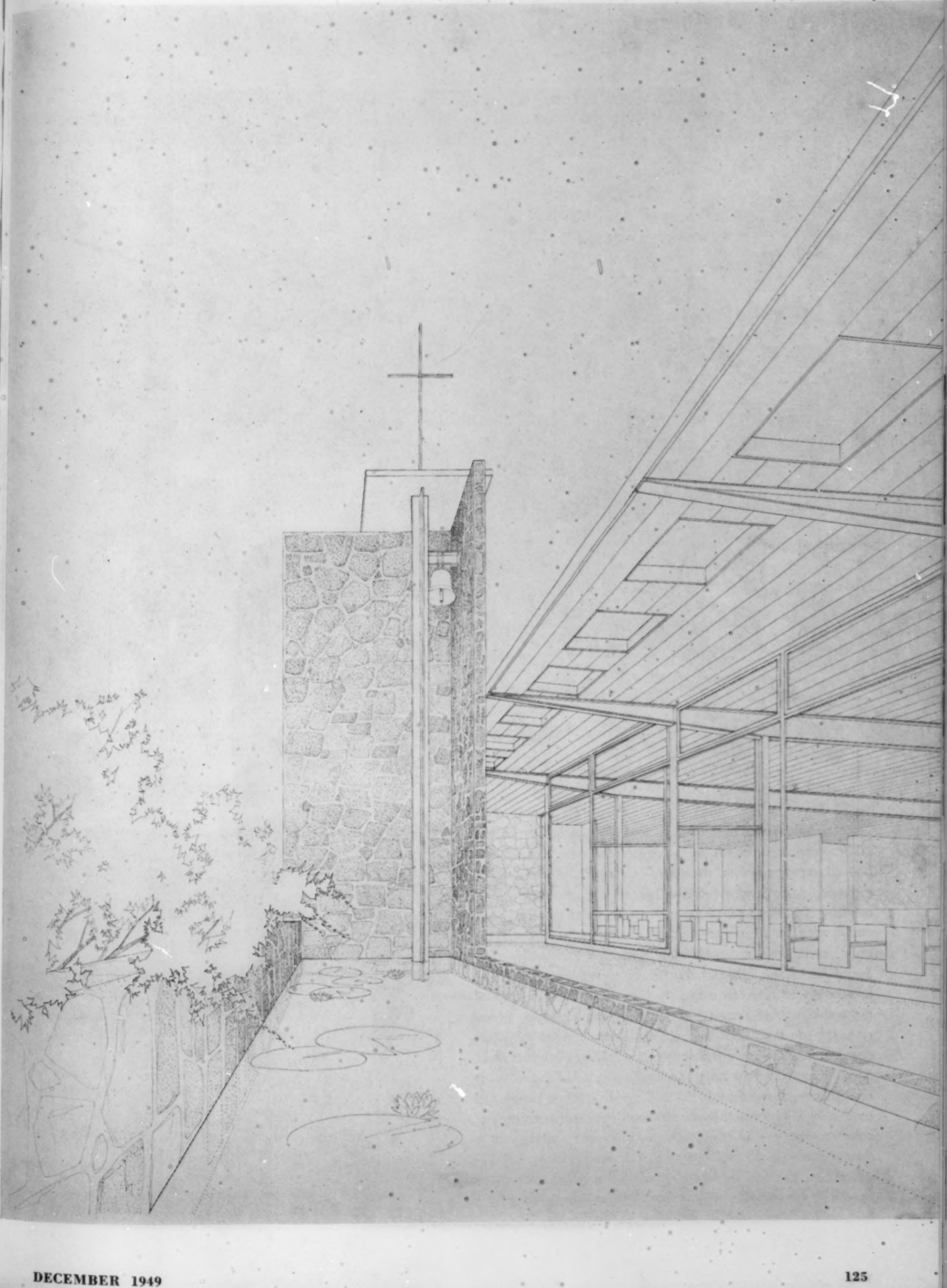
Top of page, thin-shell concrete vault, Swiss Exposition, Zurich, 1939; Robert Maillart, Engineer (photo, Museum of Modern Art); glued laminated wood arches; welded, rigid steel frame (Austin Co.). Right, Chapel of St. Francis, Belo Horizonte, Brazil; Oscar Niemeyer, Archt.; mural by Portinari (photo, Museum of Modern Art). Conventional in plan, the series of thin-shell vaults and bell tower are reinforced concrete. For political reasons the Chapel has not been dedicated. Plans: left, Basilica at Aquilea; center, Rheims; right, St. Joan of Arc, Minneapolis (see page 129)

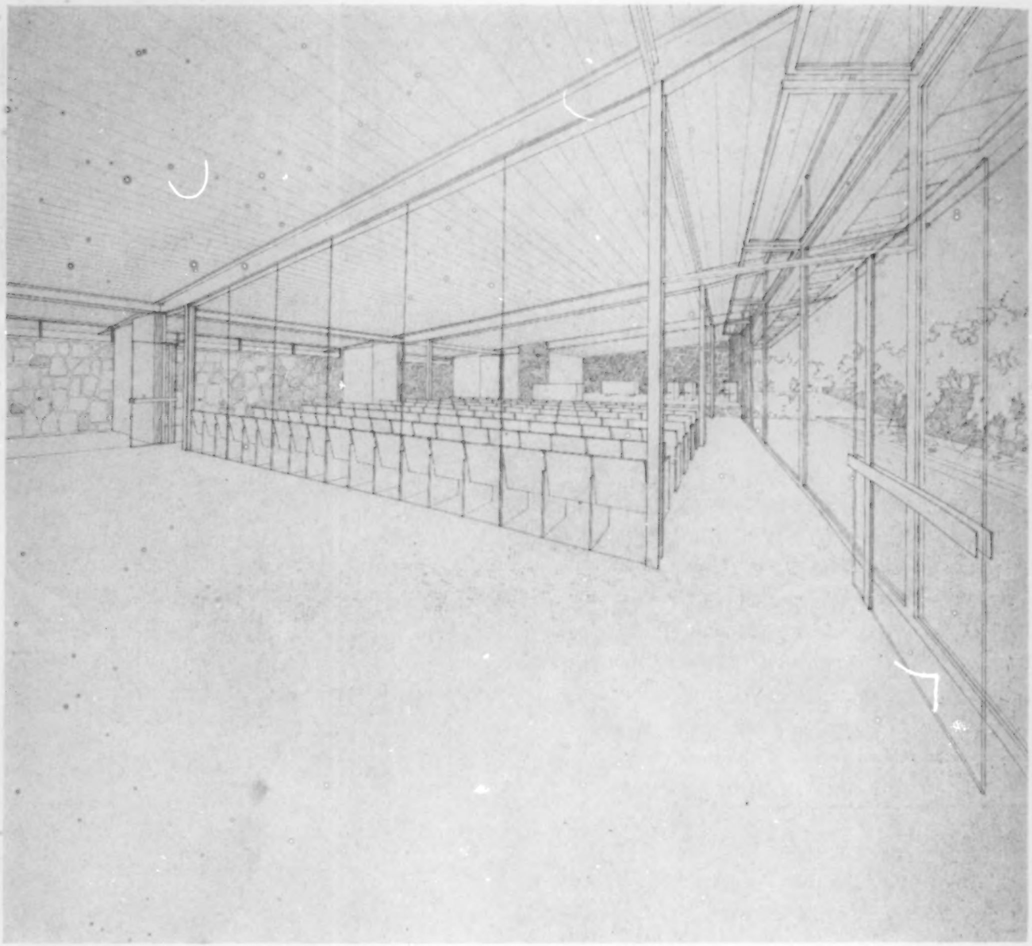
Religious Buildings

FIRST METHODIST CHURCH, PLAINFIELD, IOWA; *Schweikher & Elting, Architects*

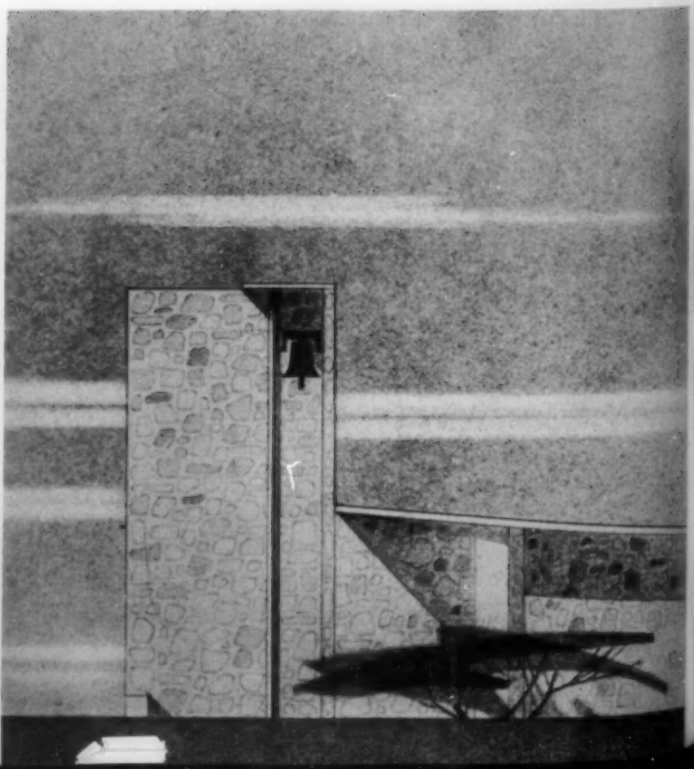

KITCHEN
STAGE
M
W
U
STORAGE
D
MAIN ENTRANCE
SUNDAY SCHOOL ASSEMBLY ROOM AND SOCIAL HALL
CLASSR'M
CLASSR'M
CLASSR'M
CLASSR'M
BELL TOWER
glass partition
REFLECT'G POOL
GRAVEL GARDEN
CHURCH ASSEMBLY ROOM
N
PULPIT
D
CHOIR
MINISTER'S STUDY (CHOIR RM. UNDER)
EXISTING PARSONAGE
D
0
10
20
30
40
50

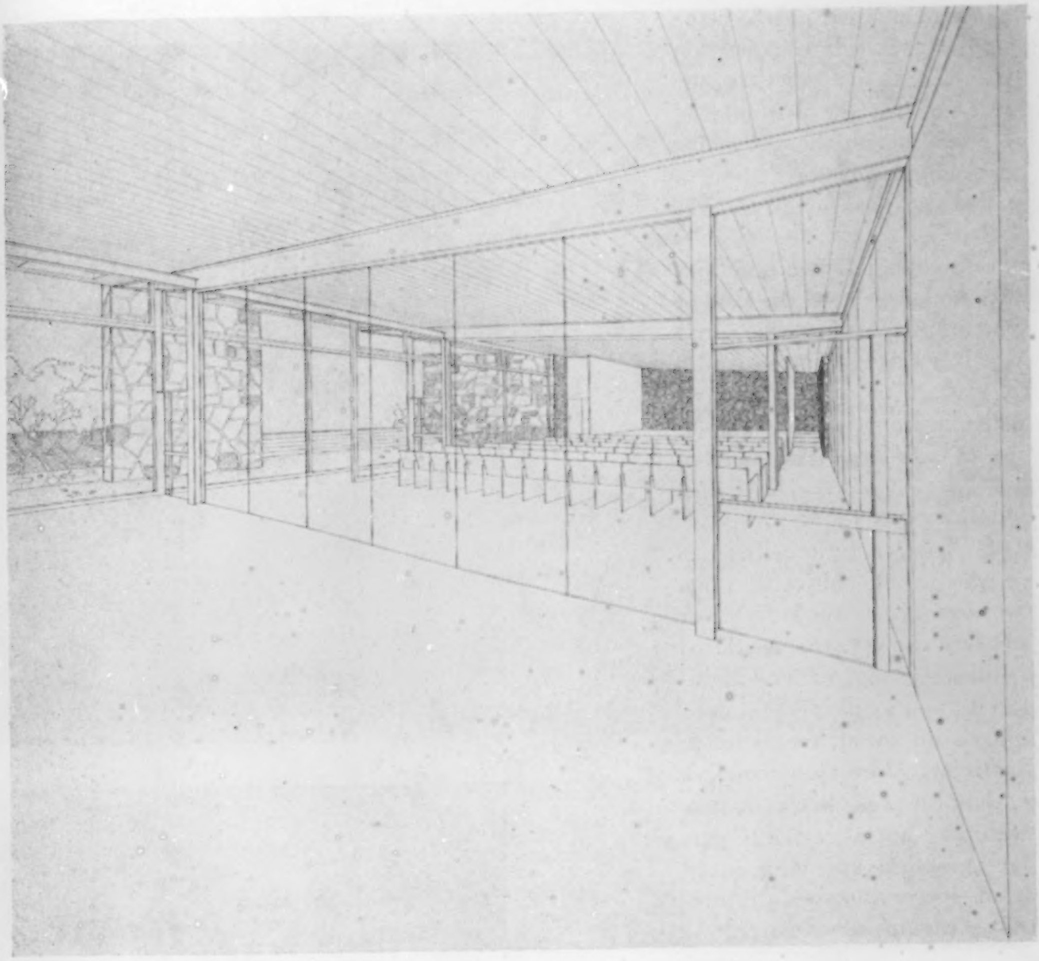
Plainfield — population 300 — lies in flat ground surrounded by long, low farm-country hills. Highway 218 connects it with Cedar Falls, thirty miles north; an Illinois Central freight line runs through. To the nearby rural population of about 1000, Plainfield, which has two churches, is something of a center. Last Spring the fifty-year-old frame First Methodist building burned; like other small-town churches, the building had been a social center as well as a place of worship and study. Although every reasonable economy must be observed in construction of a new edifice, the planning committee imposed few design restrictions on the architect, except that the site has to be the same, the Cross must be used symbolically, a bell must sound the call to worship, and construction must be non-combustible. Set down into the existing excavation to reduce both cubage and exterior wall exposure, and with garden and pool, low, sloping roof, glass, and exposed steel and masonry, the architects have conceived a church building, accepted enthusiastically by the congregation, designed to do more than fit the landscape harmoniously

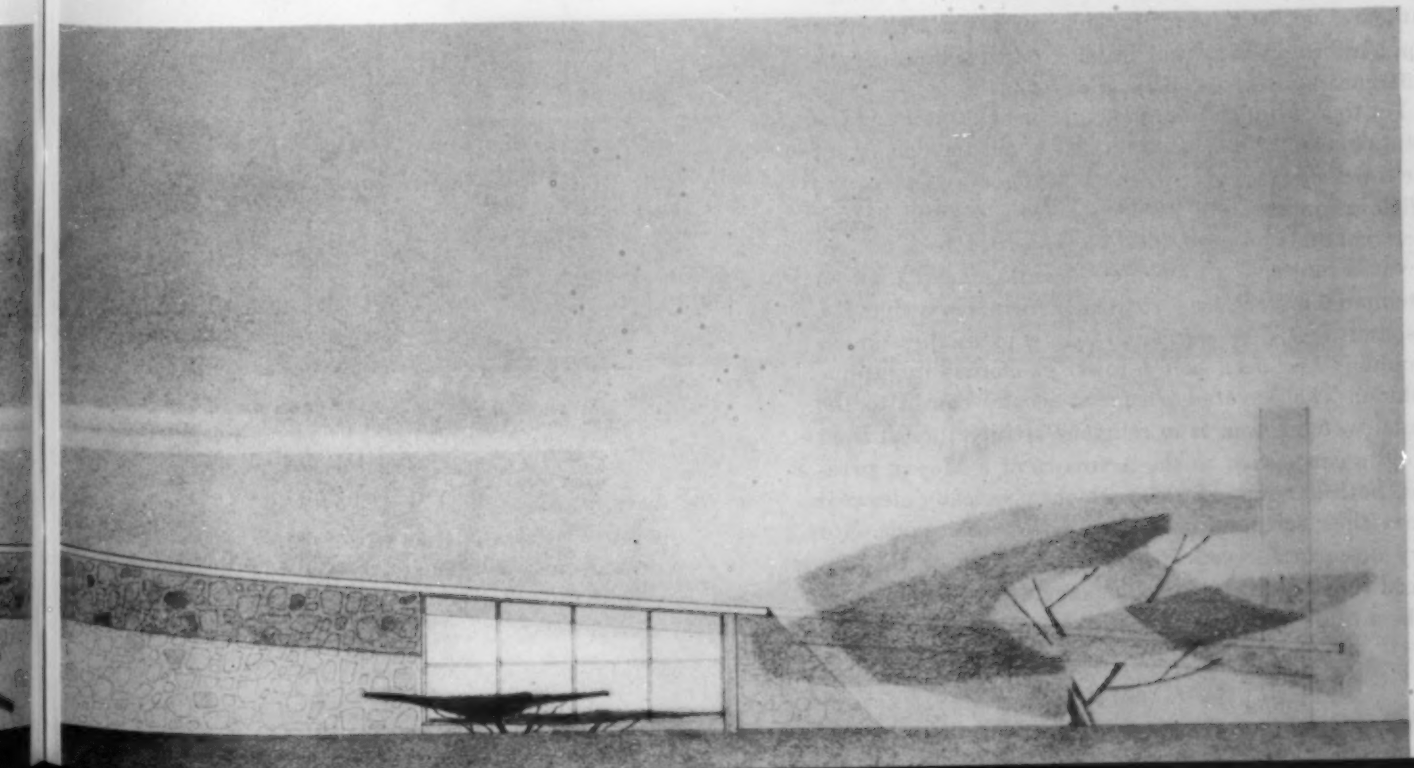




The Plainfield, Iowa, church has to seat 140 plus an overflow of 70 for services; it needs an adjacent room (for mothers and babies) equipped with an amplifier; the social hall, which might double as Sunday School assembly, is to seat 90, with an overflow of 50, and must have a stage. Four defined classrooms are needed, and six more become available by utilizing the stage, social hall, minister's study and Church assembly. The Social Hall is also the Sunday School assembly and mothers' room; the wall between it and the Church Assembly consists of removable double-glazed panels; seats are portable, hence reversible. In the perspective above, looking toward the altar, one sees how the upward swinging and folding classroom walls open to seat a larger congregation than usual. Perspective at right, above, shows Social Hall and stage. Through the glazed south wall will be visible water, flowers and shrubbery changing color seasonally — in combination with sky and building, more than a substitute for stained glass. This wall is angled to improve acoustics and enclose the required space economically; floor is to be concrete, with radiant heating inside and at entries; roof, of precast slabs, insulated, is gently pitched







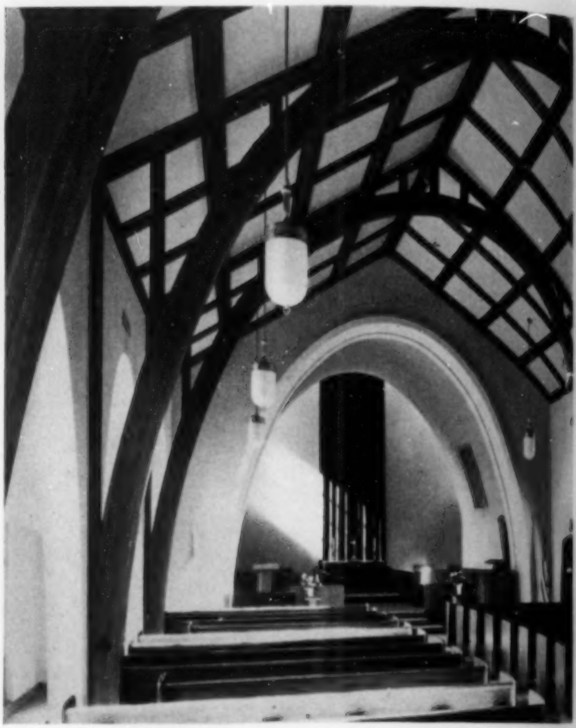
still new or because they supplant the traditional; but because to exploit them fully entails an approach to design which is unfettered by tradition, however much it may lean upon the past for true inspiration. Can you name a single historic religious monument in which the building materials contemporary with its construction were not exploited to the limit? To do less than one could with the material at hand has always produced inferior work; it is scarcely building to the glory of a god. From this point of view, copying historic forms in today's materials can be called anti-traditional, perhaps irreligious.

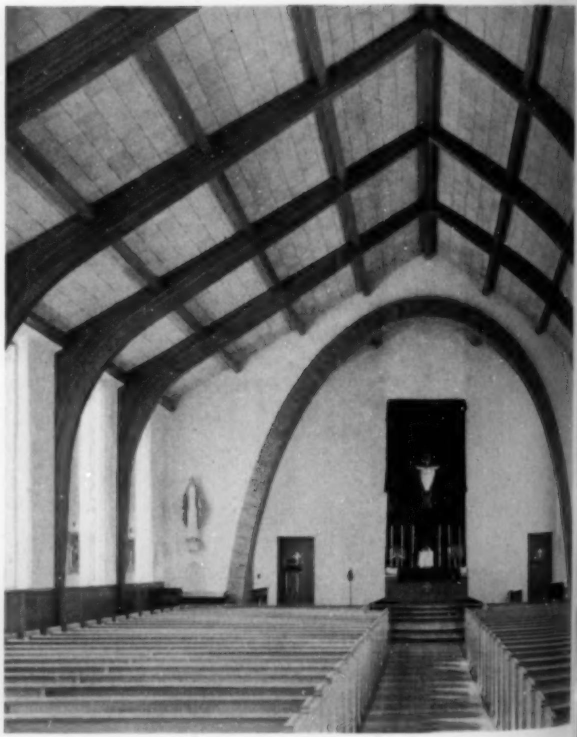
In other respects, too, the design of religious buildings is undergoing mutations. We no longer need the kind of protection massive masonry affords, against an army's spears or an animal's fangs. Nor can any physical wall that a church can build protect us against today's deadly weapons. The broadening concepts — examples can be found in all creeds — of faith embracing all men, welcoming all; of the close relation of faith to earth, water, sunlight and growing things; of the necessity for more intimate integration of religious activity with secular affairs — these leave discernible impacts upon design. If a building is to welcome all, it cannot forbid or overawe, though it need not lack dignity. If it is related to nature, it may open its walls to admit light and air, to permit a view of nature. Integration with its community may mean increased emphasis on social, recreational, athletic and educational activity. More club rooms, a social hall, a usable stage, the best possible classrooms, gymnasiums and even swimming pools, certainly gardens, become essentials. To express this spreading out of influence is the traditional lofty, massive, nature-excluding structure our best contemporary answer?

Consider the spire, steeple, belfry, or flêche — whatever its name, it has been the symbol of man's aspiration to higher things. The spire, raising its point skyward, can also be called a negation; it is certainly an attenuation, an end. In competition with the skyscraper it makes a sorry showing. The square towers of a Gothic cathedral do little better in such company. Deliberate horizontality in design might more positively accent the difference between religious and secular ideals.

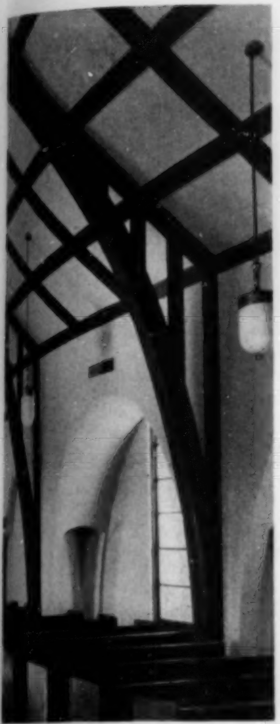
Yet there is much to be said for the bell tower and the emotional continuity it implies. It is not the concept of the tower nor of many other traditional elements of the religious building which seems incongruous today; it is their common architectural expression. Does not an elevated platform afford more encouragement than an attenuated spire? Does it not offer man, risen that far, a sound base from which to aspire to further understanding? And need such a tower be clothed in antique fashion? The elevated platform, second cousin to the feudal watch tower, is in religious architecture at least as old a conception as the Acropolis or a Mayan pyramid, both flat-topped, upon which, physically elevated above their surroundings, men glorified their gods. Not very often in succeeding centuries has the world produced religious architecture as ingenious, as honest, or as beautiful.

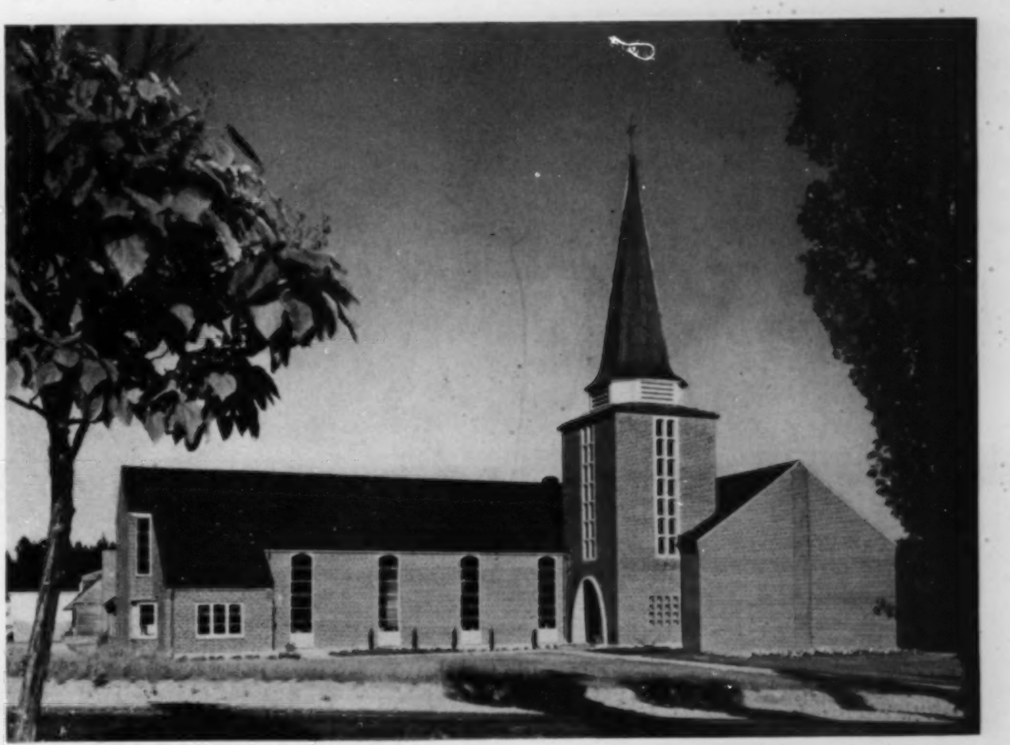
Religious Buildings

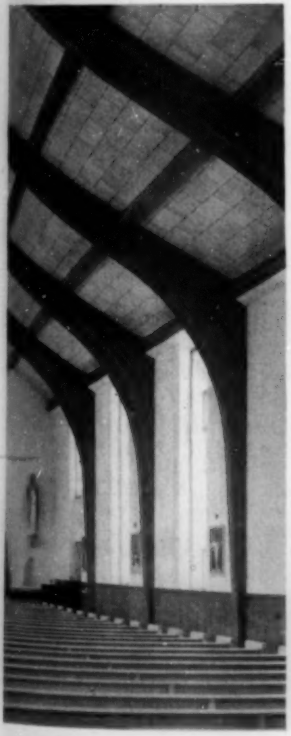


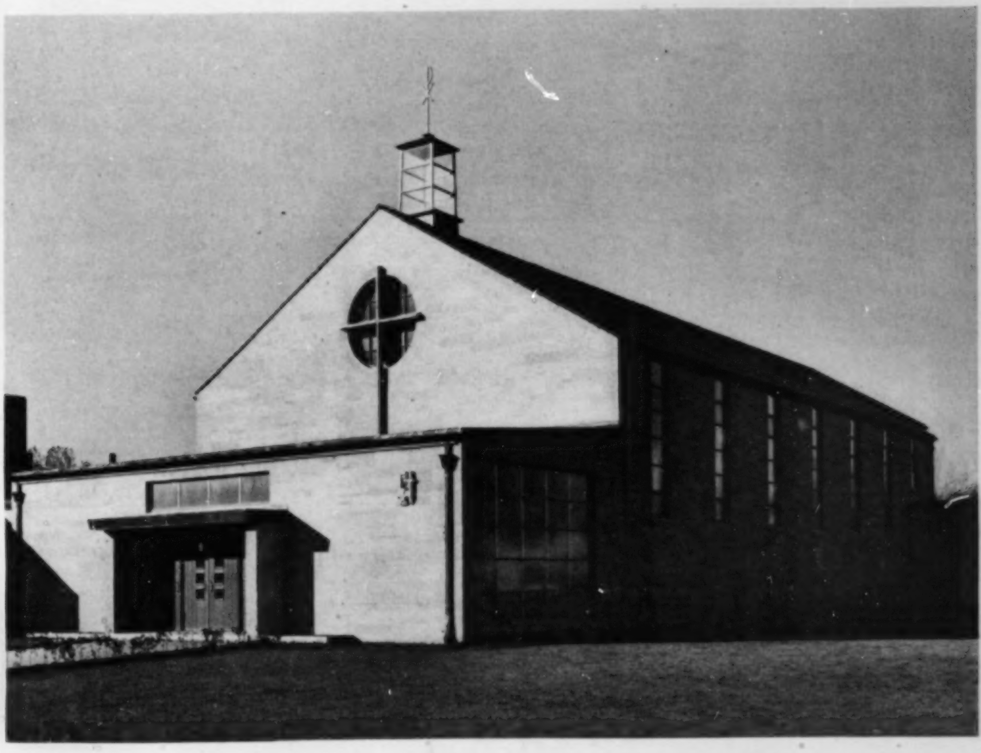


Valley Community Church, Portland, Oregon *Donald W. Edmundson, Architect*







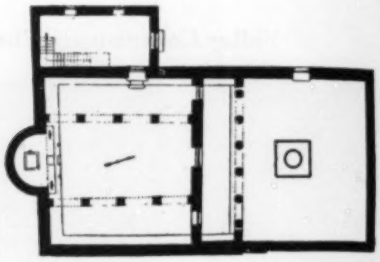


St. Joan of Arc, Minneapolis, Minn. *Hills, Gilbertson & Hayes, Architects*

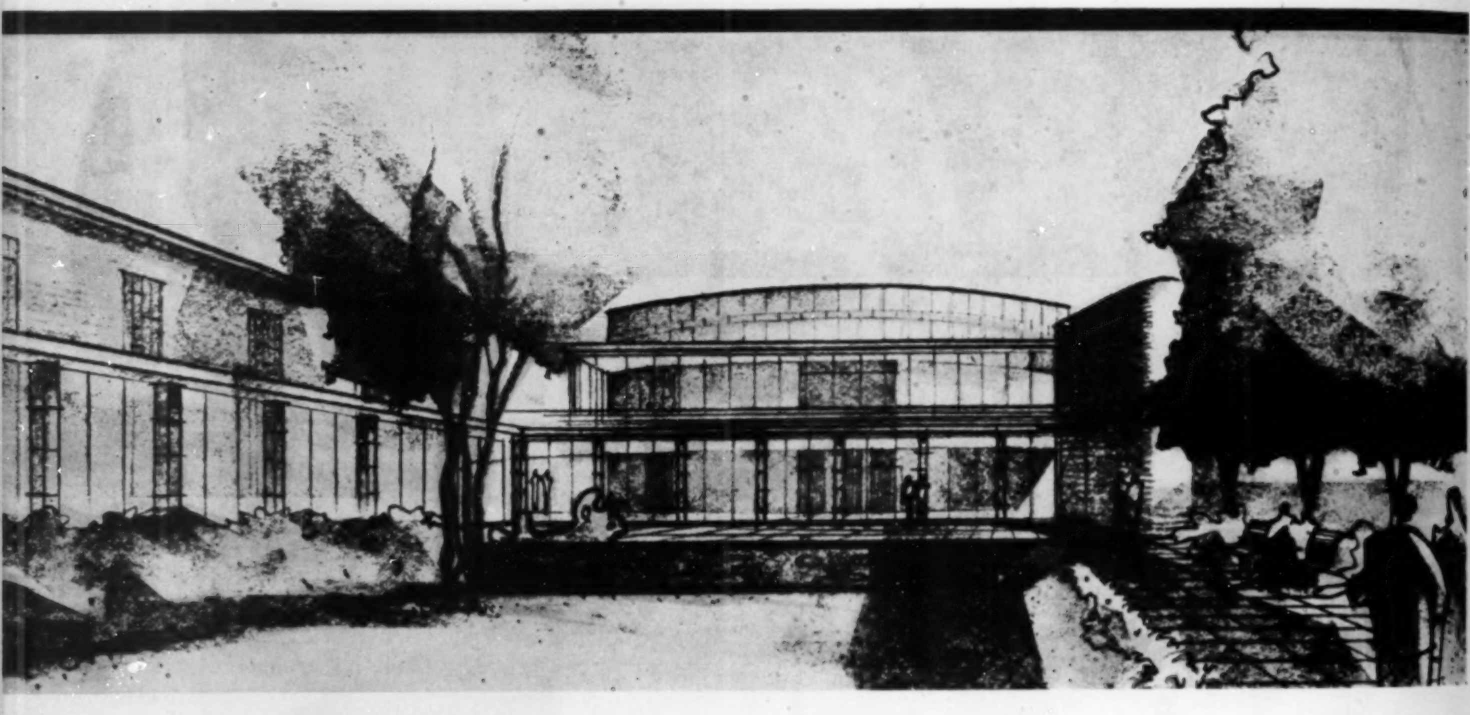
The preliminary scheme for Valley Community (United Presbyterian) Church in Portland, Oregon, appeared in Architectural Record for September 1945, on page 98. The complete scheme envisions extensive community facilities (Fellowship Hall, parlor, club room, kitchen, toilets) and numerous classrooms. At present only the church proper, which closely follows the original design, has been built. Lower two photographs also show only the church proper of St. Joan of Arc (Roman Catholic) in Minneapolis; though in this instance the long school wing, parish administrative offices, etc., have already been erected

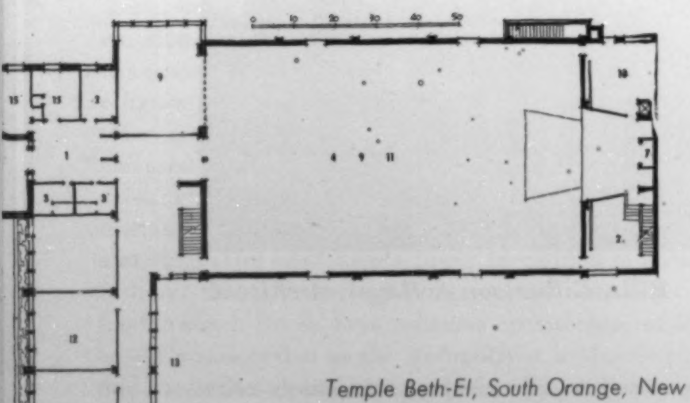
Religious Buildings

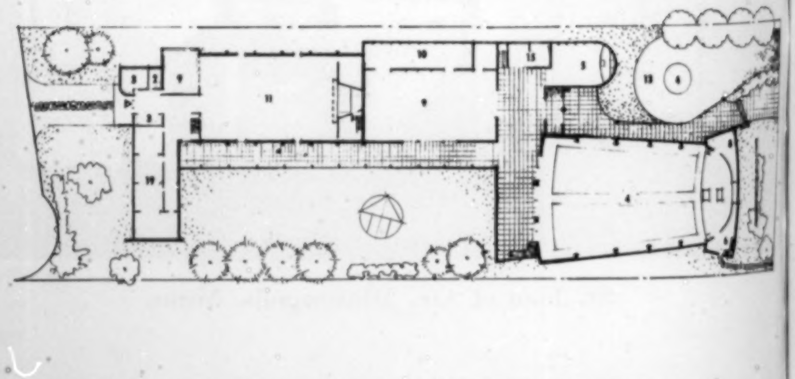
Perhaps the shell of the synagogue in Europe and America has taken on the architectural color of its surroundings — Romanesque, Byzantine, or one of the other revivals. Within there remain traditional elements: the separate room for women (plan, Fifth Century synagogue), no longer mandatory, has a counterpart in the small contemporary chapel; in all these examples are schoolrooms and gardens. Added to the ancient concept are social, recreational and athletic provisions implied when the synagogue becomes a community center; and to make the problem truly complex, the difficulty of accommodating a greatly increased congregation on High Holy Days



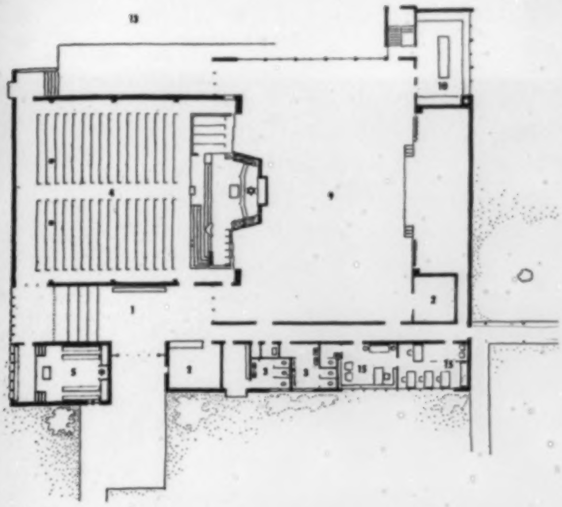
Beth Alpha Synagogue, Fifth Century, Palestine



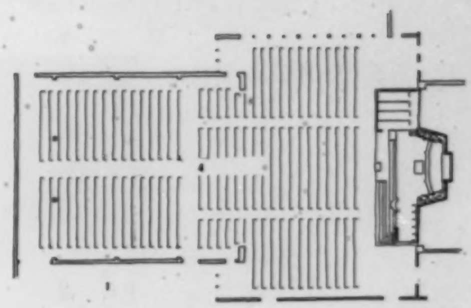




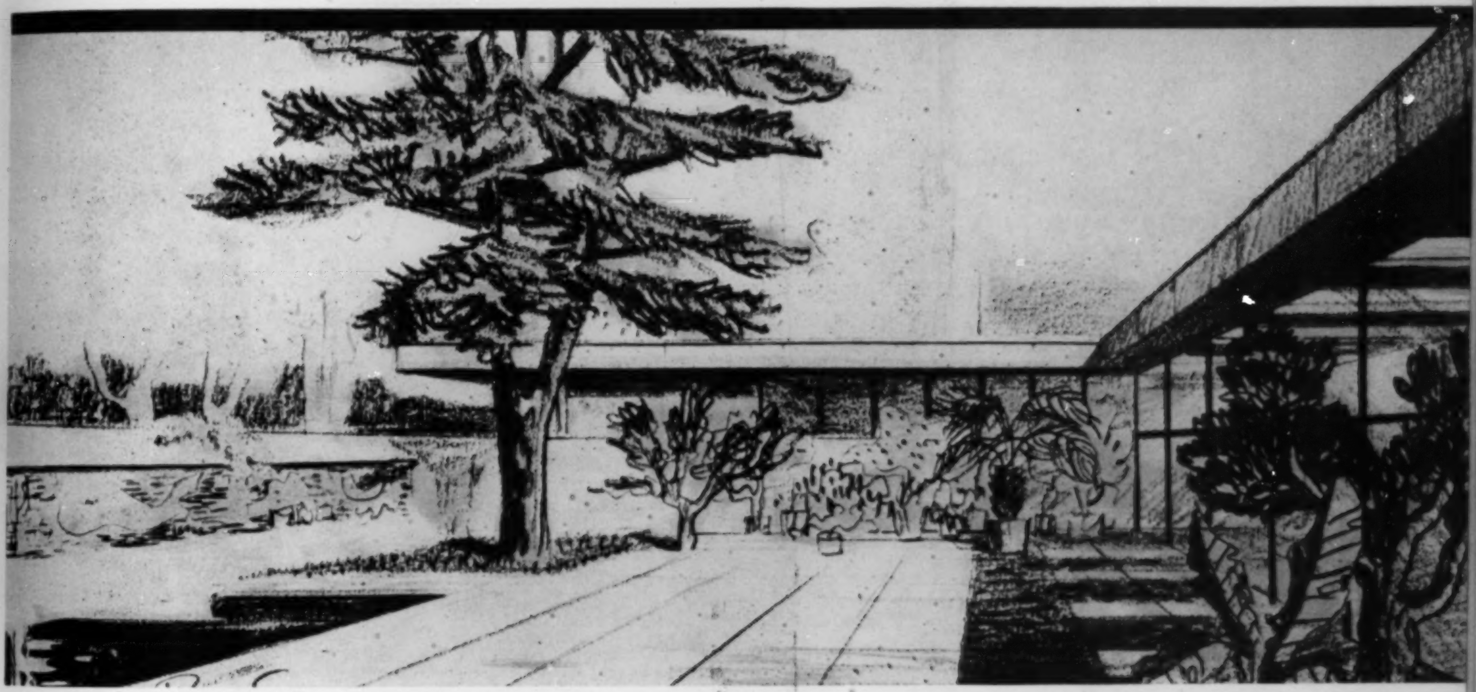
Temple Beth-El, South Orange, New Jersey; Kelly & Gruzen, Architects. Perspective shows eventual garden, small plan shows ultimate scheme; detailed plan shows portion now built (see also pp. 132, 133). The present large room serves as synagogue, social hall and gymnasium; it is designed as the gymnasium of the ultimate scheme. Under it are a recreation hall and locker rooms. These will later serve the swimming pool, which will be under the new social hall. The group will form a complete community center



West End Synagogue, Nashville Tenn., Percival Goodman, Architect

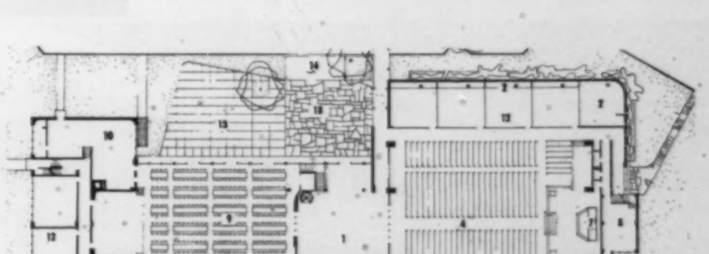


A universal problem: relatively small congregation for most services; tremendous numbers on High Holy Days. Goodman proposes here a social hall behind the synagogue, with a sliding platform for Ark, pulpit and choir, designed to move back onto the social hall stage

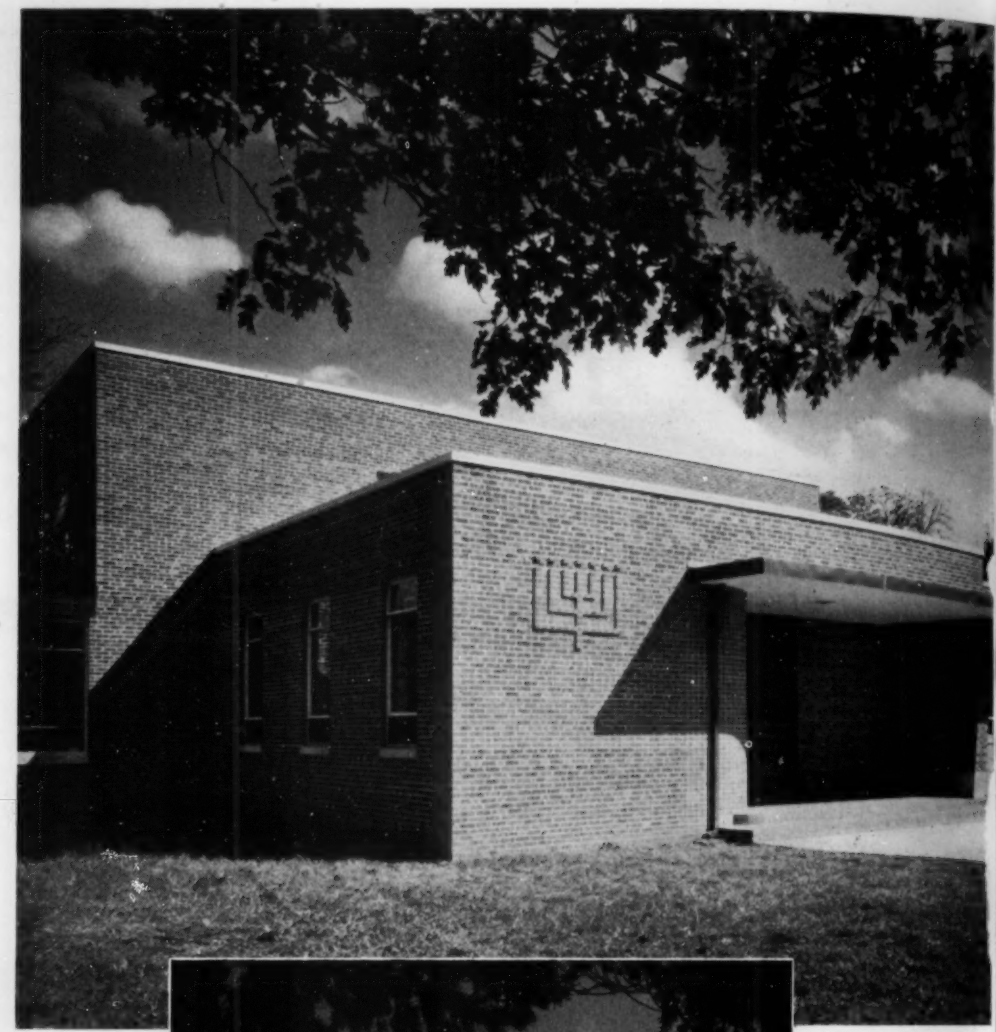


LEGEND FOR ALL PLANS

1. **Foyer**
2. **Coats, Storage**
3. **Toilets**
4. **Synagogue or Temple**
5. **Chapel**
6. **Choir**
7. **Ark**
8. **Retiring Rooms**
9. **Social Areas, Club Rooms**
10. **Kitchen**
11. **Gymnasium, Athletics**
12. **School**
13. **Gardens**
14. **Pool**
15. **Offices, Rabbi's quarters, Library, etc.**



Temple Beth-El, Providence, R. I., Percival Goodman, Architect. Perspective shows garden. Plan, with extensive community facilities, provides for enlarged congregation at special services by equipping classrooms along sides of synagogue with folding or sliding partitions

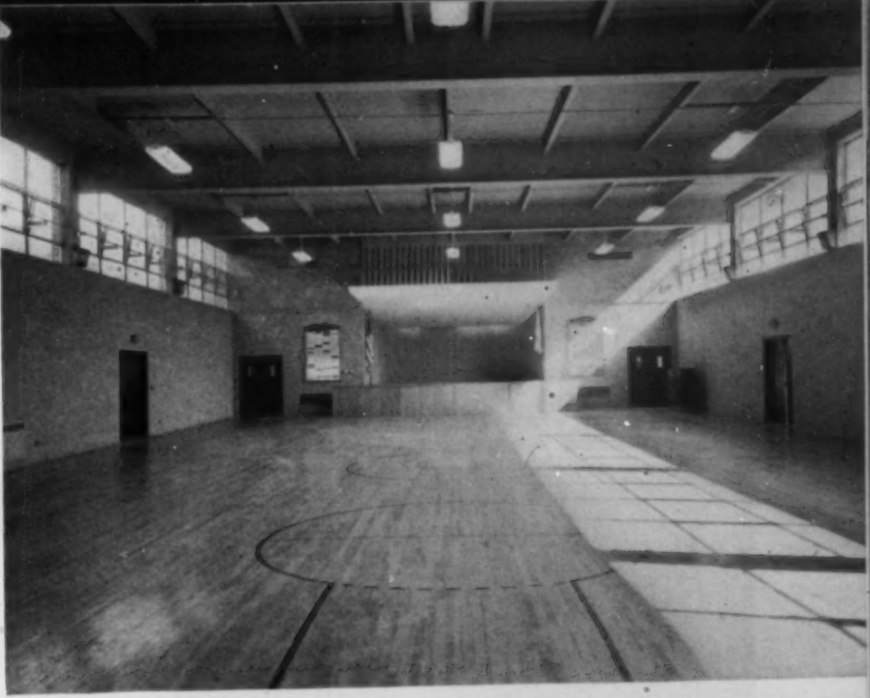


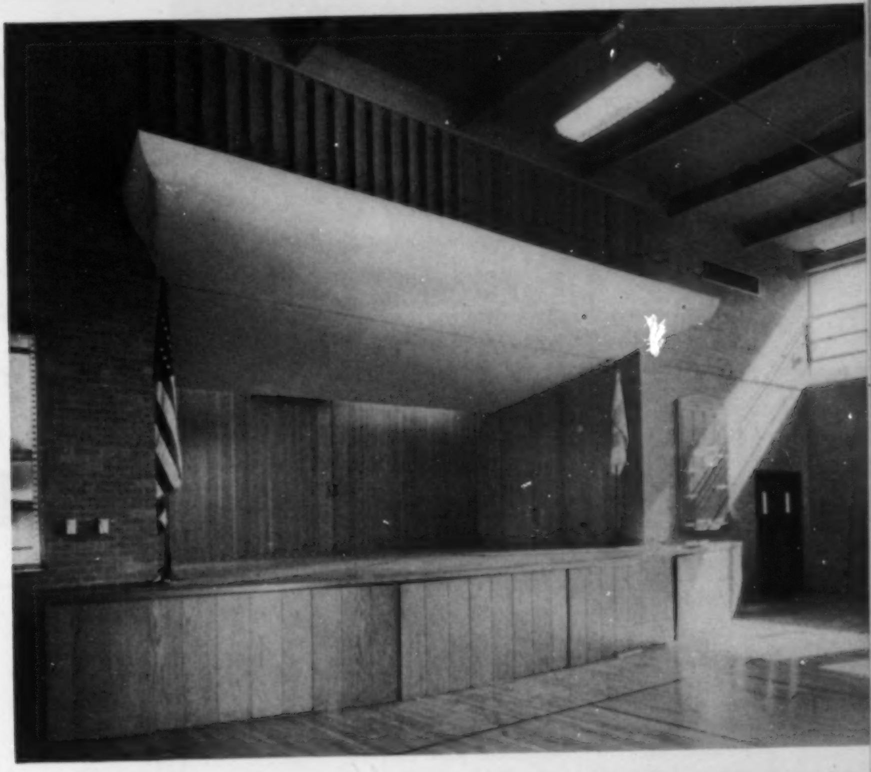
TEMPLE BETH-EL, SOUTH ORANGE, N. J.

Kelly & Gruzen, Architects

Eventually Temple Beth-El is to be a complete community center; at present, the room which will ultimately be solely a gymnasium serves also for worship and for social functions. Meeting rooms at the entrance end of the principal room, and a youth lounge over the foyer, can have their folding walls opened to accommodate an enlarged attendance at High Holy services.

Ben Schnall Photos

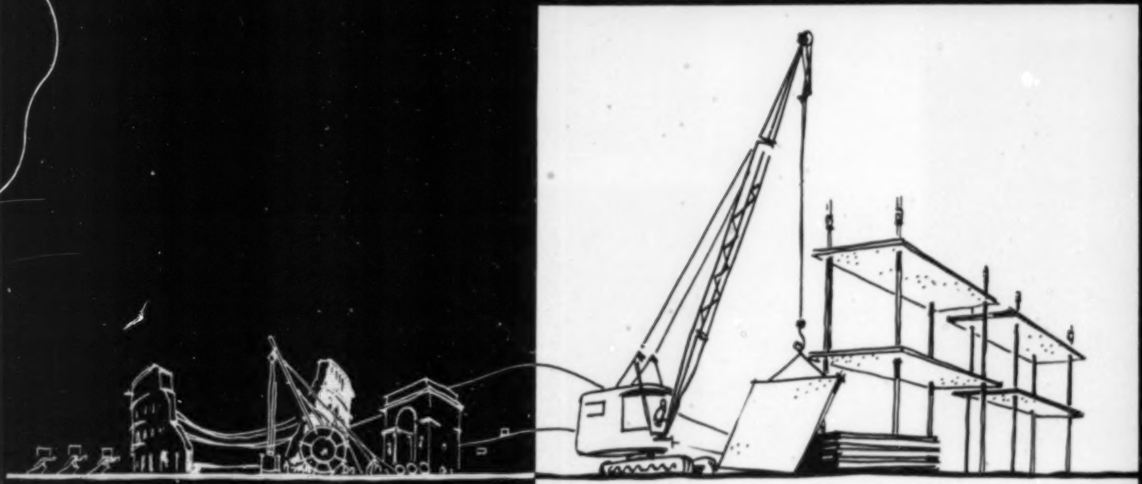




Gymnasium — synagogue is steel framed, with girders exposed for economy and painted a soft green. Roof is precast concrete slabs. Stage, built as a sound reflector, has an Ark and pulpit of ebonized maple behind vertical folding doors which conceal it except during services. Chairs are stored beneath the stage, and over it, behind the oak louvers, are choir room and organ loft. In the lounge-balcony at the other end are provisions for motion picture projection

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH



FORECASTING A NEW ERA FOR CONCRETE

*By Fred N. Severud**

Sketches by Walker O. Cain

For many years I've wanted to write an article dealing with concrete as a more inspiring building material. When used for slabs, beams and columns protected from the weather, it gives good results. But an answer must be found to the old complaint: "Exposed concrete is no good in a freezing climate. It cracks." The development of a concrete which won't crack could well mean a new era for it in architecture. The assurance of dependability plus efficient, economical construction methods that have just come on the scene opens up endless possibilities. My point in writing what may seem to be a purely technical article for the Record is to outline the principles involved in obtaining such a material and to stimulate the interest of architects in exploiting it.

Why does concrete crack? To answer this question we must analyze this material more profoundly in its modern use than anything that has come to my attention. Years of observation and laboratory research back up the basic thoughts that follow. A simple illustration may help to introduce them.

Shrinkage Causes Cracks

One day I was walking on the clay bank of an artificial lake. The season had been unusually dry and the water level was below the spillway. Where the water had receded there was a very interesting pattern of cracks in the clay — big, gaping cracks where the clay was bone dry, gradually becoming smaller where the clay had retained some moisture and almost disappearing where it was still rather wet. The cracks started in a region so wet that one would have thought the clay to be plastic enough to hold together, but this was not the case. It could clearly be seen that the big cracks originated from the fine ones.

I am convinced that the critical period of concrete is similar to this and occurs at a much earlier time than is generally assumed. When concrete is poured it is thoroughly plastic. No cracks are possible while it is in a liquid state. But as soon as it starts to solidify, there is a

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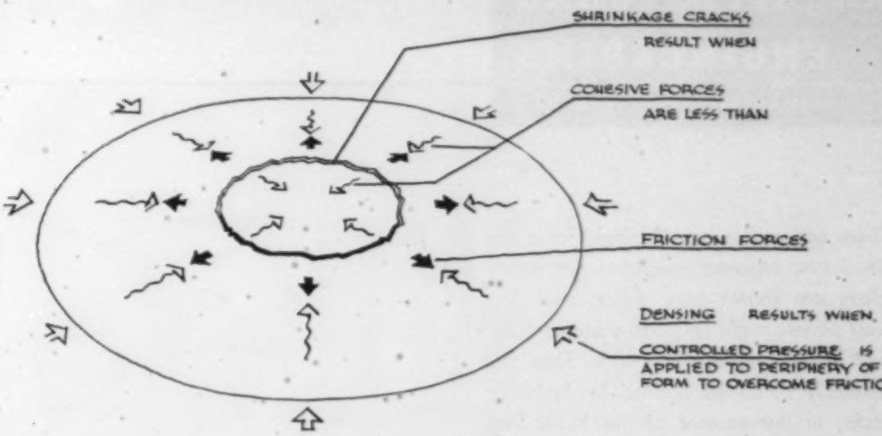
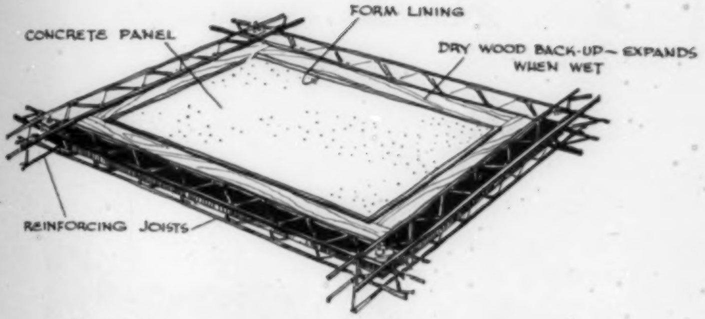
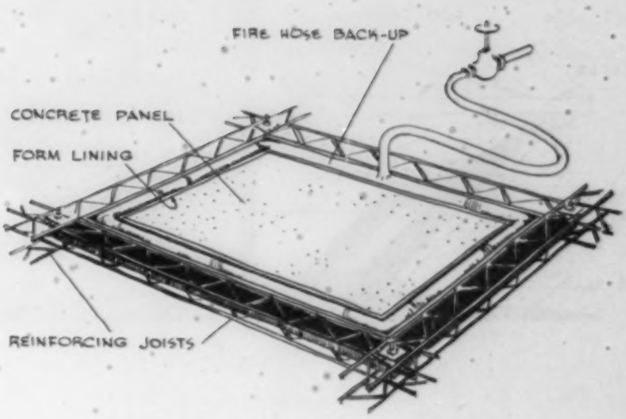
* *Consulting Engineer, New York City*


SHRINKAGE CRACKS
RESULT WHEN
COHESIVE FORCES
ARE LESS THAN
FRICTION FORCES
DENSING RESULTS WHEN
CONTROLLED PRESSURE IS
APPLIED TO PERIPHERY OF
FORM TO OVERCOME FRICTION

Sketch above demonstrates why concrete cracks in the early drying stage, and suggests applying controlled pressure at the edges to overcome this difficulty


FORM LINING
CONCRETE PANEL
DRY WOOD BACK-UP — EXPANDS
WHEN WET
REINFORCING JOISTS


FIRE HOSE BACK-UP
CONCRETE PANEL
FORM LINING
REINFORCING JOISTS

Two possibilities for squeezing concrete shortly after pouring to prevent cracks are (1) allowing wood around the edges to expand and (2) applying water pressure through a fire hose wrapped around slab. Form lining should have rubber corners to permit movement during densing process

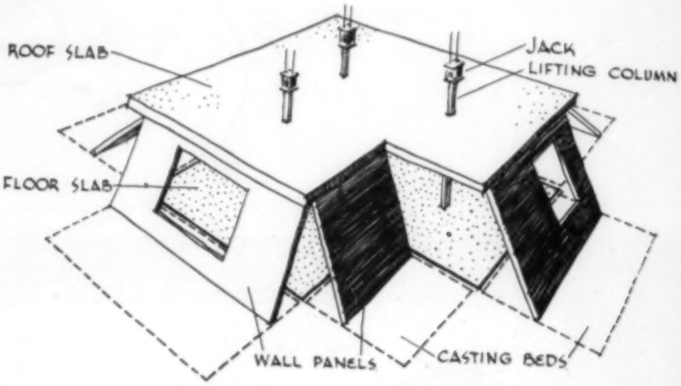
race between its slowly gaining strength and the disruptive forces caused by drying out and resultant shrinkage.

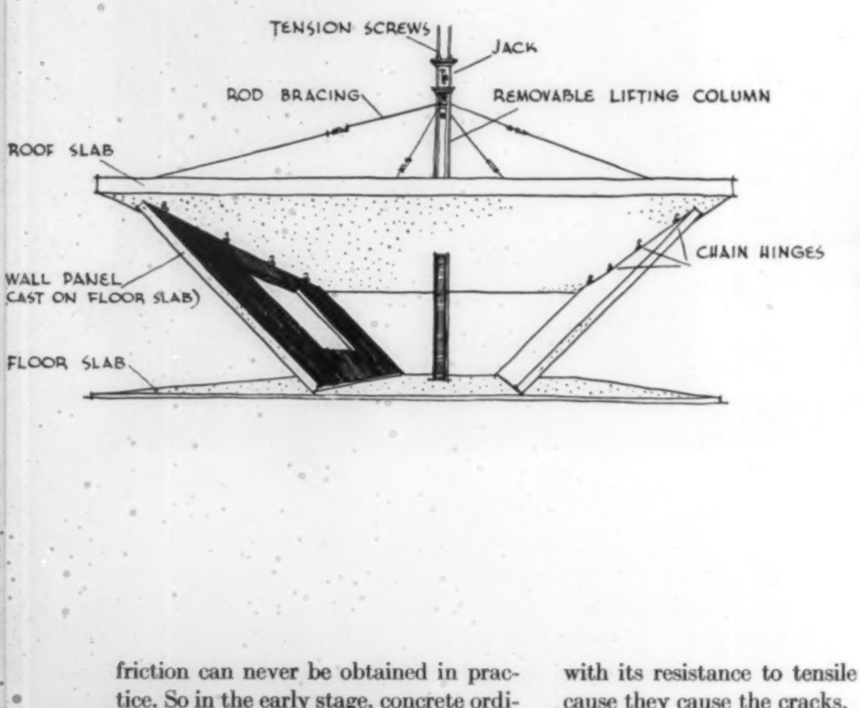
In the circular piece of concrete shown at top of this page the direction of shrinkage is towards the center. Concrete must move towards this shrinkage center in order for it to remain uncracked. If the concrete disk were free to move against the form (assuming one underneath the disk) without any friction whatsoever, shrinkage stresses would be non-existent, except for those produced by uneven shrinkage between the top and bottom surfaces. These latter stresses are usually of a much smaller magnitude and are minimized by proper curing. Such ideal condition of non-

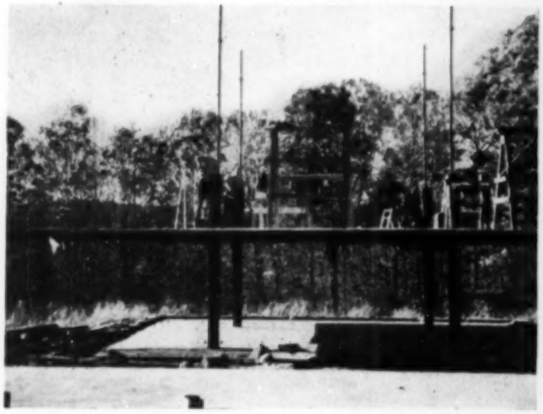
The wall panel on the front dolly was heated and compressed to get a crackless concrete which can withstand a high wind load

Photo courtesy Precast Building Sections, Inc.

There are endless ramifications for a dependable, exposed concrete—just a few ideas are shown here. Floor, roof and wall panels might be poured horizontally, with walls hinged to the roof. Then this assembly could be hoisted by hydraulic jacks, in the manner of the Youtz-Slick system (see photo). The drawing on the opposite page illustrates what might be done in future multi-story construction







friction can never be obtained in practice. So in the early stage, concrete ordinarily can't take the tug of war that takes place between the friction of the form and shrinkage forces, so it cracks.

Studies indicate that the critical period is at an age of from four to eight hours after pouring for high-early-strength concrete, and later where other cements are used. This period is so critical that hardly any concrete escapes without some internal and external injuries. It is true that concrete has a certain self-healing ability at such an early age, but never will it be able to develop the strength possible if it could be "babied" through this period without any cracks. It is also true that microscopic fissures do not influence the compressive strength of concrete, but in exposed concrete we are concerned mostly with its resistance to tensile forces because they cause the cracks.

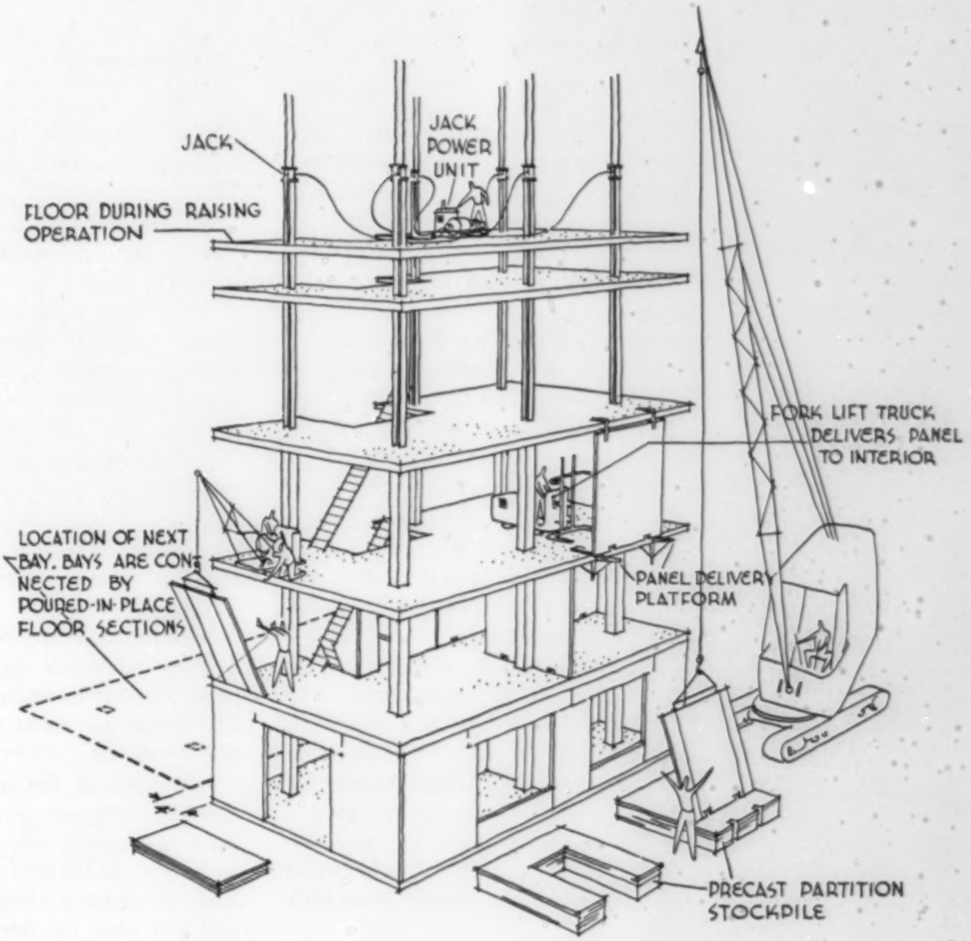
Coddling Young Concrete

Suppose by some means we could coddle concrete along without cracks for the most critical period. Would it then be strong enough to resist the later attacks of shrinkage? The answer seems to be a very emphatic yes! If we were able to assure a crack-free concrete until it reached a tensile strength of say 100 psi, it would then take a force of almost 10,000 lb to rupture a piece of concrete with a cross-section of 8 by 12 in. The forces restraining concrete from shrinkage are usually of a much less magnitude.

One obvious means of achieving this is to eliminate the shrinkage stresses by producing external forces that induce compression into the concrete equal to the tension caused by frictional resistance; or, better yet, to produce external forces larger than the shrinkage forces so that the net result will be a concrete that sets up under compression during its early hours.

For example let's say we pour concrete in horizontal forms on the ground or, maybe on another slab. We wrap a fire hose around it, build a stiff frame outside and slip in a board on the other side of the fire hose. Then we connect the fire hose to a water supply. The fire hose, under pressure, bucks against the frame and pushes against the concrete, so that the shrinkage forces are not only entirely eliminated, but if properly designed, the concrete is shoved together — "densed," in other words.

Placing dry wood inside the forms


JACK
JACK POWER UNIT
FLOOR DURING RAISING OPERATION
FORK LIFT TRUCK DELIVERS PANEL TO INTERIOR
LOCATION OF NEXT BAY. BAYS ARE CONNECTED BY POURED-IN-PLACE FLOOR SECTIONS
PANEL DELIVERY PLATFORM
PRECAST PARTITION STOCKPILE

seems to me to offer very interesting possibilities. By coating the wood on the outside so that it does not absorb water from the wet concrete and letting the water into the inside at the proper moment, it should be very easy to control the forces generated so that they can be accurately timed. See drawings of these methods on page 135.

Densing is Not Prestressing

It should be clearly understood that "prestressing" of concrete is an entirely different process from "densing" it. The object of prestressing is to introduce sufficient compression into the concrete member so that a residue of compression will remain during all loads to which the member will be subjected. Prestressing requires that relatively large stresses are introduced into the concrete wire or rod reinforcement and that the prestressing reinforcement remain as a vital element. Prestressing is done, in the final hardening stages, against concrete of a high strength.

Densing, on the other hand, requires a comparatively gentle pressure for the duration of only a few hours.

The correctness of the foregoing principles was recently demonstrated when our firm was called upon to increase the tensile strength of concrete panels produced by Precast Building Sections, Inc. of New York City, as a mass-production adaptation of the method developed by Grovener Atterbury many years ago. In starting the mass-production operation, the panel lacked sufficient tensile strength to meet the requirements of the New York City Building Code. The panels are 4 by 10 ft and 8 in. thick with 1½ in. concrete inner and outer surfaces connected by intermittent webs. According to the code they are permitted for use in panel walls provided they can withstand 30 lb per sq ft wind pressure. The first panels coming off the assembly line did not quite reach the required strength. We advised them to "dense" the concrete during the critical period by covering the mold with a steel plate connected to the cores, and exerting a pull on the cores similar to what is done when the cores are removed. By this very simple and inexpensive expedient, the tensile strength was immediately tripled.

Potentialities of "Densed" Concrete

A "densed" concrete would fit in beautifully for exterior walls with a method originally developed by McKim, Mead and White, architects; Edmund J. Rappoli, contractor; and our firm, for dormitories at the University of Vermont. (See Architectural Record, June 1949, pp. 142–144). It consists of producing full-scale concrete panels between columns, or bearing walls to serve as walls and partitions. The panels are cast in horizontal forms, one atop another, and are hoisted into place by cranes. Some outside panels have been used, but in most cases the buildings have been given a 4 in. brick exterior laid up to form a cavity wall with a concrete panel as the inner withe. These panels have been produced in the ordinary manner without any attempt to densify them. I would have no hesitancy, however, in using panels produced in layers, as described, on the exterior, provided they had been properly "densed." Pouring concrete horizontally and densing it for absolute permanency would seem an ideal combination for exposed concrete. Poured-in-place concrete walls are hard to produce to give satisfactory finishes. Dropping concrete from the top of the vertical forms often causes segregation. It would also mean that much more water must be used in the concrete to make it workable, than if it were placed in a thin horizontal layer.

Pleasing Wall Textures

Precast panels poured in horizontal forms are very economical, so some care and ingenuity can go into the production of a pleasing outer surface, without causing excessive costs. In some cases, the concrete surface in itself may fit into the design, either as it comes, or given a lined pattern to bring it into proper scale. It may be desirable, however, to produce a separate finish which is produced monolithically with the concrete, such as terrazzo. Pouring a layer of selected aggregate and exposing it is also a very simple thing to do when concrete is poured in a horizontal position. This might also serve as a separating medium. We could pour 4 in. of lightweight concrete in the form and then on top of it a selected aggregate. Then if we spray the surface with a chemical which prevents the setting of the surface — and such a material is available commercially — we can pour another panel on top using the selected aggregate first and then the lightweight concrete. After the panels are separated, the unhardened mortar is brushed away, exposing the selected aggregate. Metallic hardeners may also suggest themselves. Making the concrete with cloth or canvas textures is no trick at all.

Another construction method, recently publicized, in which densed concrete could be used to good advantage is the Youtz-Slick system, developed by Philip Youtz, Yorktown Heights, N. Y. and Tom Slick, director, Institute of Inventive Research. (See Architectural Record, Jan. 1949, pp. 121–123). Briefly it consists of pouring roof and floor slabs on the ground in layers and sliding the roof slabs up steel columns by the use of hydraulic jacks located at the top of the columns; note the photo on page 136.

Application of the Youtz-Slick system is contemplated for a classroom-administration building at Trinity University, San Antonio, Texas. Architects are Smith, Cocke and Ford; consulting architect, W. W. Wurster; structural engineers, Frank T. Drought; and we are consulting engineers. Each panel is designed to be hoisted on and supported by eight columns. A 4 ft avenue is left between panels in order to compensate for inaccuracies and to leave room for conduits. You can't depend on getting the slabs completely level. The concrete will warp a little and be higher here and there — the 4 ft avenue which is finally poured in place takes care of all this.

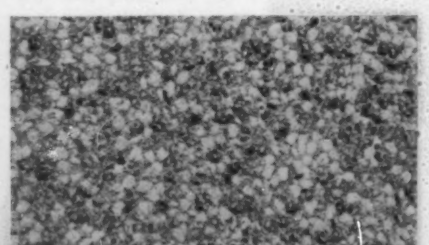
It's obvious that we are headed towards a more complete mechanization of the construction field — larger building elements placed in buildings with machines. I can visualize a building produced using a frame constructed according to the Youtz-Slick system, bringing in ready-made partitions and precast walls and hoisting them into position by crane, as shown in the drawing on page 137.

With the combined methods, the work is done efficiently and without any mess. There is no scaffold to construct. The building is clean and streamlined as it should be.

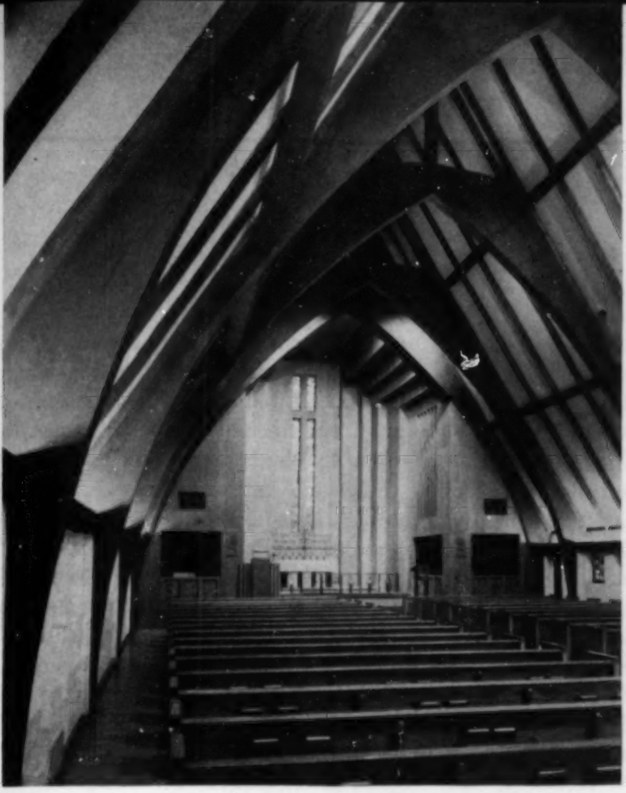
Just think of the possible ramifications. Not only can you lift the roof slab, but you can hook side walls to the roof by hinges. As the roof is lifted the side walls are dragged along, and when the roof is in place the side walls are vertical. The lifting column can be removed if the side walls are bearing walls. Where other materials besides concrete are desired for some of the walls, these can be left out at first and then be filled in later.

The walls can be poured either outside the floor and roof slabs or else interleaved between them. You can think of it as a packaged building in which the walls lie under the roof slab, and when the roof slab is raised, the whole building folds right out. The roof and wall slabs can be hoisted high enough so that the walls can be adjusted and then eased down by the lifting jacks into correct position.

May it not be that we are entering into a new era for concrete? Crack-free concrete for building exteriors with pleasing surface colors and textures . . . knit into buildings by simple, efficient construction methods. I am convinced the fundamental features are valid. It is up to architects and engineers working together to develop them further.



The architect may want an exposed concrete panel finished with a selected aggregate for surface color and texture



Photos above and bottom right courtesy of Unit Structures, Inc.

Photo courtesy of Timber Structures, Inc.

Glued-laminated arches are very adaptable to church design, and can be fabricated to almost any size or shape desired. Above: "V" type arches used in Mt. Olive Lutheran Church, St. Paul, Minn.; Kiel, Bard and Vanderbilt, Architects. Top right: St. John The Baptist Church, Hugo, Minn.; Hill, Gilbertson and Hayes, Architects. Lower right: St. Peter's Reformed Church, Kiel, Wis.; W. C. Weeks, Architect

By Albert G. H. Dietz*

GLUED TIMBERS TAILORED TO FIT

When Otto Hetzer of Weimar, Germany, filed his first patent application on glued-laminated wooden construction about 1904, he was in the pioneering stage of a type of construction which quickly spread to other parts of Europe, especially Switzerland and the Scandinavian countries. Although a company was formed in the United States during the nineteen-twenties to fabricate glued-laminated wooden structural members, it was not until late in the nineteen-thirties after the United States Forest Products Laboratory made a study and published the results of the research that the construction began to be reasonably widespread. Structures employing glued-laminated members were becoming quite numerous, and the principles of the construction were coming to be known and understood by architects and engineers generally when World War II with its shortages of materials and enormous demand for buildings accelerated the adoption of this type of construction. Today, glued-laminated wooden members are widely employed in many diversified structures, especially in churches where the arch-form frequently demanded by the design is found to be particularly well adapted to glued-laminated construction.

Since the grain of all pieces in glued-laminated members runs parallel, as opposed to plywood in which the adjacent plies are oriented at 90°, or some large angle, the laminated members are characteristically narrow, deep, and long as contrasted with plywood.

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* Associate Professor of Structural Engineering, Department of Building Engineering and Construction, Massachusetts Institute of Technology, Cambridge, Massachusetts.

Compared with ordinary "solid" wood or sawn timber, glued-laminated wood has certain characteristics which must be carefully weighed in any decision to employ it in preference to unlaminated lumber. The principal advantages are the following:

1. *Size.* Because almost any number of pieces of wood can be glued side by side and end to end, there is practically no limit to the size of member that can be obtained: Dredge spuds 36 in. square and 85 ft long have been fabricated, and beams or arches 4 or more ft deep and more than 200 ft long have been employed in buildings.

2. *Efficient structural shapes.* Arches and similar curved forms are frequently more efficient structurally than are posts and lintels or ordinary trusses. Because thin boards can be bent dry without serious loss of strength, such curved shapes are not difficult to attain in glued-laminated wood, as contrasted with "solid" wood or other structural materials. This is one of the principal advantages of glued-laminated wood and the factor which is often decisive in its adoption.

3. *Optimum moisture content.* Under the best of conditions large timbers are difficult to season. Drying and shrinkage usually take place in the finished structure, often resulting in settlement or distortion in the frame. The relatively thin stock used in glued-laminated members is easily and quickly dried; consequently, a large glued-laminated timber is dry at the time of fabrication.

4. *Resistance to fire, decay and insect attack.* Glued-laminated timbers are usually massive and therefore possess the fire-resistance inherent in all massive timber construction. Before being glued together, the individual laminations can be salt-treated against attack by fire or wood-destroying fungi and insects. If bonded with waterproof synthetic-resin adhesives, the glued-up timbers can be treated with oily, water-soluble or solvent-soluble preservatives by standard methods.

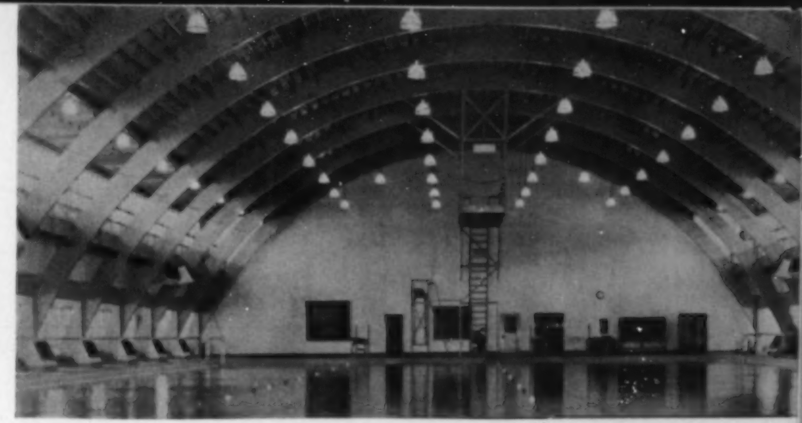
5. *Efficient use of high-grade and lower-grade material.* In many structural members the maximum stresses occur in only a relatively few small zones, whereas the rest of the member is lightly stressed. In glued-laminated construction it is possible to use a mixture of high-grade and lower-grade stock, placing the high-grade material only at the points of maximum stress and using lower-grade material for the rest of the member.

In glued-laminated construction, smoothly planed surfaces and good adhesives are required. Where two pieces meet end-to-end a scarf joint must be used to obtain continuity, adding to the waste. And more labor is required to fabricate a glued-laminated timber than to merely saw and dress a "solid" timber. It is not surprising, therefore, that glued-laminated wood is likely to cost more per board foot than "solid" timber. However, for a just comparison, the higher load carrying capacity and suitability for end use of glued-laminated framing must be considered. In final cost, glued-laminated framing may be more economical.

Basically, the engineering design of glued-laminated timber is the same as that of "solid" lumber. In both, the controlling element in design may be bending stress, shear parallel to the grain, compression parallel or perpendicular to the grain, or modulus of elasticity. Certain modifications, however, are possible and are practiced to a greater or lesser extent by different designers. Because mixed grades can be employed — high-strength material where stresses are high; lower-strength, where stresses are low — certain savings in material costs may be effected. Complete advantage of this approach has not been

Left: three-hinged arches for high school, Barrington, Ill.; Perkins and Will, Architects. Right: Trinity Baptist Church, Santa Monica, Calif., uses five curved arches, 46 ft, 8 in. wide and 17 ft on center; Louis S. Gamble and Associates, Designer

Left: Photo courtesy of McKeown Bros. Co. Right: Summerbell Roof Structures



The enormous demand for buildings during the war stimulated the use of glued-laminated framing, such as these arches at the Naval Air Station in Minneapolis

Photo courtesy of Rilco Laminated Products, Inc

taken because of some uncertainty as to the statistical probability of having a large number of defects such as knots occur in the same region of a glued-laminated member. Studies are underway to resolve this question.

Lacking a better approach, one recommended method of employing, in effect, mixtures of grades is to select, from a pile of lumber of a given stress-grade, the pieces in which the largest knots are not more than one-half the maximum permitted size, and to use these pieces as the outer laminations of a beam, to comprise not less than one-tenth the total depth of the member at each edge. Under these circumstances the allowable stress of outer laminations may be increased to the next highest stress grade, which in effect raises the entire beam one stress grade. Similarly, if the material in the middle three-fifths of the depth of a beam or arch subjected principally to bending is not more than one grade lower than the rest of the member, the allowable stresses for the outer two-fifths may be applied to the entire member.

Recommended allowable stresses in compression parallel to the grain and in shear take cognizance of the fact that dry lumber of any given quality is stronger than green lumber of the same quality, and that a glued-laminated member, because it is dry to begin with, is not likely to degrade in use, unlike a green timber, which usually develops seasoning defects upon drying. Recognizing this, stresses allowed in compression parallel to the grain may be as much as 50 per cent higher than in ordinary "solid" lumber, and stresses allowed in shear parallel to the grain are not only higher, but are the same for all grades of a given species and density. Some designers also recognize the fact that lumber is stiffer when it is dry than when it is green and increase the modulus of elasticity approximately five to ten per cent.

Very little has yet been done with mixed species of wood in the same timber. The simple theory of bending and compression parallel to the grain of such mixed laminated members has been developed and some laboratory tests have been carried out to verify the theory. Despite their possible advantages, few full-sized timbers of this type appear to have been employed.

When individual laminations are bent prior to gluing, bending stresses are set up in the laminations and upon these are superimposed the stresses later induced in the glued-up member when in service. Experience and research have shown that the initial bending stresses largely disappear, but it is standard practice to reduce the allowable bending stresses for a curved member from that of a straight member of the same size by the following factor:

$$1-2000\left(\frac{t}{R}\right)^2$$

in which

t = thickness of lamination in inches

R = radius of curvature in inches

and t/R should not exceed 1/100 and preferably not 1/150. Knots and unscarfed joints must be avoided in regions of maximum curvature.

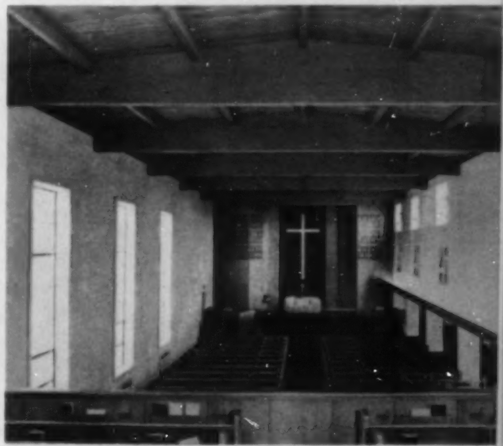
Advances in glued-laminated construction have been made possible to a large extent by improved adhesives. Today the adhesives most widely employed for glued-laminated members for building are casein and urea-formaldehyde. Casein is not strictly a new adhesive. The ancient Egyptians used glues based upon casein and caustic, essentially the same as is used today. Urea-formaldehyde is one of the group of thermosetting synthetic resins widely employed in the plastics industry. In contrast with other commonly employed thermosetting resins, urea-formaldehyde has the advantage that it can be formulated to be mixed with water at room temperature, and will harden at that temperature, although it will harden much faster at higher temperatures. Casein, of course, is also mixed with water at ordinary temperatures and will harden at temperatures practically as low as freezing. Both casein and urea-formaldehyde provide bonds adequate for the type of exposure encountered in buildings such as churches. If the highest in water-resistance is demanded, as in ships' keels, the more costly resorcinol-formaldehyde is used if the adhesive must harden at ordinary room temperature; or mixed resorcinol and cheaper phenol formaldehyde are employed if the glued-up assemblage can be cured in a chamber heated to temperatures in the vicinity of 125 to 150 F. Straight phenol formaldehyde (or melamine formaldehyde) may be employed if temperatures as high as 250 to 320 F can be attained by such means as high-frequency heating. Phenol, resorcinol, and melamine formaldehyde provide the maximum in water resistance.

Best results are obtained if the member is fabricated in a shop where adequate equipment is available for preparing the stock, spreading glue, and clamping the assemblage together with sufficient pressure to insure intimate contact.

If designed with intelligence and fabricated with care, glued-laminated wood framing can provide strong, graceful, efficient, and economical framing for churches and similar buildings as is attested by its growing use in such structures.

Glued-laminated beams in Redemption Lutheran Church, Detroit, Mich., span width 42 ft, 16 ft spacing; Emmerling, Spellicy and Hartman, Architects

Photo courtesy of Unit Structures, Inc.



PRODUCTS for Better Building

Insulation of All-Metal Building

Thermal and acoustical insulation in all-metal structures has been demonstrated in a building recently completed at the Sun Oil Co.'s Toledo, Ohio, refinery. The one-story structure has sheet aluminum walls and roof, and is 640 ft long by 40 ft wide. To prevent overheating of the interior in summer, and permit economical winter heating, 2 in.-thick *Fiberglas PF* insulation, unfaced and unpainted, was applied to the walls and roof by a method claimed economical and rapid. Mechanical fasteners were first mounted on the walls with standard adhesive. The insulation was then impaled on the clips and the prongs bent flush with the surface. Insulation at the roof is fastened to wooden strips attached to the steel beams. The installation is said to have been completed by a crew of nine men in less than three weeks. Where appearance is a consideration, the insulation can be sprayed with a water base paint. Fiberglas is also supplied with a vapor barrier facing. Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

Bricklaying Device

Brick-Lay-R, a new portable device demonstrated recently at Huntingdon College, Montgomery, Ala., reportedly speeds bricklaying from three to four times the normal pace, provides better construction, and cuts labor costs up to 36 cents a sq ft. The device does not lay bricks automatically; speed is made possible by eliminating many standard practice operations.

Bricks are placed by hand in the metal jig, which has built-in spirit levels, ends and sides for plumb, and interior guides to align the bricks. In operation, the Brick-Lay-R is clamped into place, mortar is deposited from a master scoop and leveled by a screed, and then 8 to 12 bricks are bedded. A second scoop of mortar is smoothed over the course, and the device is unclamped and shifted to repeat the process. Adjustable extensions span wall widths from 8 to 13 in. and are adaptable to any standard size brick. Walks and flat surfaces may be laid with the same machine. Hodgson-Sommers, Inc., Montgomery, Ala.

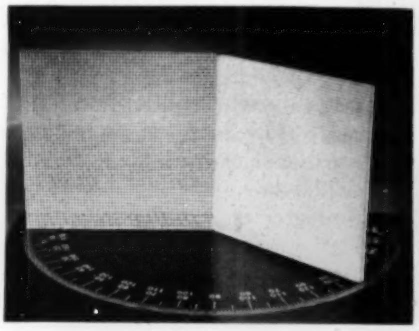
Left: insulation mounted by clips on metal walls. Right: application to ceiling strips

Louver Glass

In *Fota-Lite* a louvered, "egg crate" lighting effect is obtained by engraining small, translucent vanes in ⅛ in. glass. The white opalescent vanes are produced in the full thickness of the glass by a photographic process.

The material is said to allow direct illumination to pass through while blocking and diffusing light angling to the side. A slight surface diffusion is said to obscure tubes and reflectors of fluorescent or incandescent light sources. Among the advantages claimed are smooth, easily cleaned surfaces, dust-tight shallow fixture construction, permanent sealed-in louvers which won't discolor, and material not affected by temperature changes.

Fota-lite panels may be cut to size for troffer and ceiling mounted fixtures or for overall glass ceilings. Besides the standard grid patterns, special designs can be photographically developed in the glass. Lighting Sales Dept., Corning Glass Works, Corning, N. Y.



New louvered glass diffuses angling light

Resistant Veneer

Truwood, a veneer reported resistant to fire, alcohol, acids, scratching and staining, is combined with a resin-bonded laminated plywood base, treated for dimensional stability and resistance to fire, rot and vermin. Prefinished with an invisible laminate, the panels are available in popular foreign and domestic wood finishes, including Prima Vera, walnut, mahogany and Ava Durae. The panels are furnished in sizes up to 4 by 8 ft in any thickness of base desired, or in millwork custom-built to specification. Fox Bros. Mfg. Co., 2715 Sidney St., St. Louis, Mo.

Plastic Coated Fabric

A new type upholstery fabric, *Armalow*, has been developed for inside and outdoor use. The material is said to be capable of withstanding rain, snow and sunshine; of remaining soft, pliable, and relatively unchanged in appearance after long service. It is also maintained that the fabric will not stiffen with age

(Continued on page 174)

MANUFACTURERS' LITERATURE

Reinforced Stucco

The Keystone System: Stucco Application, Plaster Reinforcing and other Reinforcing Applications. Manual gives step by step procedures for applying reinforcing; describes ingredients, mixing, curing and texturing of stucco and plaster. Stucco overcoating and the reinforcing of interior tile work, terrazzo, and insulation are also covered. A table gives stucco requirement data. 44 pp., illus. Keystone Steel & Wire Co., Bldg. Trades Div., Peoria 7, Ill.

Radiant Heating

Radiantile: a Panel Heating System Using Forced Warm Air. Booklet discusses radiant heating, the Radiantile system, and its advantages. The four tile units from which an installation is built are described and uses shown. Design computations, specifications, floor plans, typical installations, and construction details are included. 30 pp., illus. Clay Products Assoc., 100 N. LaSalle St., Chicago 2, Ill.

Duct Insulation

Fiberglas Duct Insulations. Contains design data for the application of Fiberglas duct insulating materials. Properties and specifications are provided, with a detailed description of field application procedure and finishing of duct surfaces. Diagrams and photographs illustrate the methods. 12 pp., illus. Owens-Corning Fiberglas Corp., Toledo 1, Ohio.*

Wall Covering

Timbertone Structural Papers. Folder contains a group of swatches of Timbertone Structural Papers and a catalog listing papers available, with specifications for hanging, measuring, shading, washing and cleaning the material. 6 pp., illus. Timbertone Decorative Co., Inc., 114 E. 32nd St., New York 16, N. Y.

Sheet Steel

Special-Purpose Sheet Steels for Architectural Beauty and Permanence. Booklet describes properties, architectural characteristics and uses of Armco's Stainless Steels, enameling iron, *Zincgrip* (coated to withstand severe forming) and *Zincgrip-Paintgrip* (bonderized surface ready for immediate painting) for commercial and home building. Photographs show typical interior and exterior applications. Specifications and a check list of sheet steel uses in the home are included. 12 pp., illus. Armco Steel Corp., 5149 Curtis St., Middletown, Ohio.*

Baseboard Heating

Functional Heating Design with National Art Baseboard (Catalog No. 559). Presents construction details, typical applications, advantages and ratings for forced hot water and steam systems employing National Art Baseboard heating units. 4 pp., illus. The National Radiator Co., Johnstown, Pa.*

Plaster Aggregate

Schundler Plaster Aggregate for Modern Walls. Describes properties of Schundler Vermiculite aggregate. Tables give mixing proportions and quantities for use over various bases and types of constructions. Specifications cover materials, mixing, application and finish coats. 4 pp., illus. F. E. Schundler & Co., Inc., 45–15 Vernon Blvd., Long Island City, N. Y.

Cork Floors

Dodge Vinyl-Cork Flooring. Lists features, patterns, and sizes of Dodge Vinyl-Cork floortiles with photographs of interior installations. Two pages are devoted to results of independent tests on the tiles, including abrasion, dimensional changes, color fastness, conductivity, water absorption, friction and resistance to oil, fire, scratching, acids and alkalis. 8 pp., illus. Dodge Cork Co., Inc., Lancaster, Pa.

Hardware

Cipco Builders Hardware. Illustrates numerous standard and new designs in builders hardware. Among the items covered with drawings and specifications are: door bumpers, fasteners, handles, knockers, pulls and stops; casement and double-hung window hardware; handrail brackets; house numbers; letterbox and name plates; lavatory hardware; extruded thresholds; and transom checks. Tables give U. S. standard finish symbols and comparative U. S. government numbers. 80 pp., illus. The Cipco Corp., Cole St. at 22nd St., St. Louis 6, Mo.

Unit Ventilators

Trane Unit Ventilators to Bring Fresh Air to Schoolrooms for Health and Comfort of Children (Bulletin S-340). Pictures and describes installations of the Trane Unit Ventilator in schoolrooms. A cut-away illustration shows the interior of the unit, its construction features and method of operation. 12 pp., illus. The Trane Co., La Crosse, Wis.*

Entrances

Kawneer Entrances Meet Every Building Requirement. Styles and features of Kawneer stock and custom built metal entrances, doors and glass door frames are given in this booklet, with drawings showing installations in institutions, showrooms, theaters, restaurants, office buildings, stores and shops. Specifications and details are included for four stock units. 14 pp., illus. The Kawneer Co., Niles, Mich.*

Automatic Windows

Vita Automatic Windows. Folder describes electrically operated, double glazed window and screen units manufactured by the Vita Automatic Windows, Inc. Construction, features and operation are discussed, with installations shown in plan and section details and photographs. 4 pp., illus. Vita Automatic Windows, Inc., 101 Park Ave., New York 17, N. Y.

Waterproof Basements

How to Make Basements Dry and Beautiful. Classifies basements as to the degree of dampness and suggests corrective measures. Gives directions for dampproofing basements having mild dampness with Medusa Portland Cement Paint, and those having more severe wetness with waterproofed cements. Notes are given for new construction,

(*Continued on page 194*)

Other product information in Sweet's File, 1949.

HARDWARE—4: Types of Finishes

By Seymour Howard, Architect, *in cooperation with American Society of Architectural Hardware Consultants*

Finishes

The *finish* of the metal must be carefully distinguished from the *base* metal. Some finishes can be obtained by electroplating on a different metal; for some (chromium) this is the only method. A magnet can be used to detect iron or steel base metal beneath the plating.

Durability

The *durability* of the finish is greater on unplated metals, when the finishing process is applied directly to the base metal. Non-ferrous base metals (and stainless steels) finished in natural color are the most durable. Improvements in chromium plating make this a long-lasting finish.

Base Metal

The base metal may be either *wrought* (fabricated) from thin sheet material or *cast*. Cast designs are heavier, more durable and expensive.

Standard Finishes

In the accompanying tables, US

(*Continued on page 147*)

STANDARD FINISHES FOR BUILDERS' HARDWARE

SYMBOL	GENERAL DESCRIPTION	METAL APPLIED TO	HOW PRODUCED	NOTES
USP	Primed for painting		Cleaned, one coat paint	
US1B	Bright japanned	Usually iron, steel	Dipped or sprayed with black "Japan" varnish, baked on	Often used on cast-iron lock cases
US1D	Dead black	Ditto	Ditto without gloss	
US2C	Cadmium-plated	Ditto	Electroplated	Not recommended for wearing surfaces
US2G	Zinc, electroplated	Ditto	Ditto	Ditto
US2H	Zinc, hot-dipped	Ditto	Dipped in molten zinc bath	Ditto
*US3	Bright brass	Iron, steel, wrought and cast brass	Produced on solid brass by various polishing operations; on iron and steel by plating	
US3A	Bright brass, no lacquer	Wrought and cast brass	Ditto	Limited to brass base metal
*US4	Dull brass	Iron, steel, wrought and cast brass	Ditto	
*US5	Dull brass, oxidized and relieved	Ditto	Darkened by chemical treatment; subsequent brushing or polishing "relieves" high parts of design	Ornamental designs only; use US4 for plain surfaces
*US9	Bright bronze	Iron, steel, wrought and cast bronze	Produced on solid bronze by various polishing operations; on iron and steel by plating	

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* *For explanation see text, Sheet No. 6*

HARDWARE—5: Types of Finishes

By Seymour Howard, Architect, *in cooperation with American Society of Architectural Hardware Consultants*

(*Continued from page 144*)

numbers for finishes are not consecutive. The missing numbers were formerly in the list, but represent finishes which are no longer commonly used. Examples: gold, silver, antique copper. If such finishes or any other special finishes are desired, the manufacturer should be consulted and time allowed for special work.

Many manufacturers do not use the US standard numbers for their finishes. However, they include an index of finishes in their catalogs showing their own numbers and the corresponding US number.

Practically all metals used are alloys of two or more elements, and each manufacturer may vary the chemical analyses of his alloys. Essentially, brass is an alloy of copper and zinc. Technically, bronze is a copper-tin alloy; commercially, however, the term includes not only copper-tin alloys but also certain copper-zinc alloys having a typical bronze color. White bronze refers to a large

(*Continued on page 149*)

STANDARD FINISHES FOR BUILDERS' HARDWARE

SYMBOL	GENERAL DESCRIPTION	METAL APPLIED TO	HOW PRODUCED	NOTES
US9A	Bright bronze, no lacquer	Wrought and cast bronze	Same as US9	Limited to bronze base metal
*US10	Dull bronze	Iron, steel, wrought and cast bronze	Ditto	
*US10A	Dull bronze, oxidized	Wrought and cast bronze	Ditto	Limited to plain surfaces
US10B	Dull bronze, oxidized and oil-rubbed	Ditto	Ditto	Limited on wrought bronze to butts
*US11	Dull bronze, oxidized and relieved	Iron, steel, wrought and cast bronze	Darkened by chemical treatment; subsequent brushing or polishing "relieves" high parts of design	Ornamental designs only; use US10 for plain surfaces
US11A	Dull bronze, oxidized and relieved, oil-rubbed	Wrought and cast bronze	Ditto	
*US14	Nickel-plated	Iron, steel, wrought and cast brass or bronze	Electroplated directly to brass or bronze. Iron and steel first copper-plated, then nickel-plated	Polished surfaces
*US15	Nickel-plated, dull	Ditto	Ditto	Limited to plain surfaces
*US15A	Nickel-plated, dull, oxidized and relieved	Ditto	Darkened by chemical treatment; subsequent brushing or polishing "relieves" high parts of design	Limited to ornamental designs
*US17A	Nickel-plated, imitation half-polished iron sanded, oxidized and relieved	Ditto	Ditto	

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* *For explanation see text, Sheet No. 6*

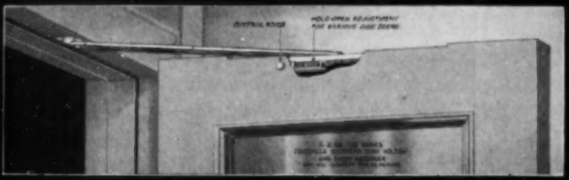
Used in Foremost Buildings Everywhere

G-J DOOR DEVICES

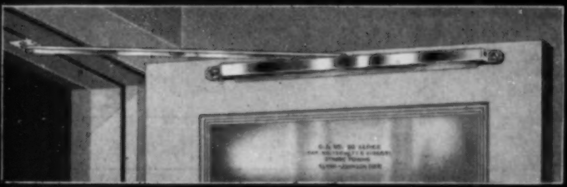
1. **A Complete Line**
2. **Proved in Service**
3. **Known for Distinction**

FOLEY'S
Houston, Texas
Owner: Federated Department Stores, Inc., Cincinnati, Ohio
Architect: Kenneth Franzheim, Houston, Texas
General Contractor: Frank Messer & Son, Inc., Cincinnati, Ohio

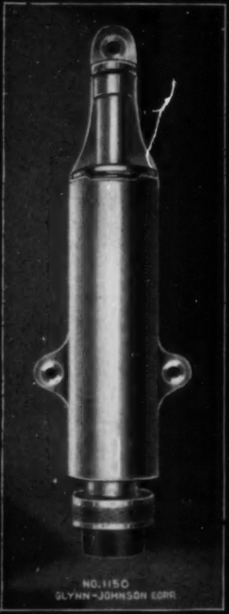
For more than a quarter century G-J Door Devices have been enjoying the unqualified recommendations of leading architects in specifications for public buildings throughout the country. Not only because of the fine quality and unvarying dependability of the products themselves, but also because the G-J line includes devices for ALL types of doors and their various controlling problems.



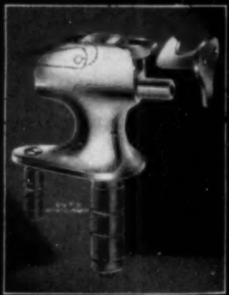
G-J 100
Concealed Type Overhead Door Holder



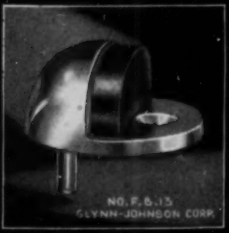
G-J 90
Surface Type Overhead Door Holder



G-J 1150
Plunger Type
Door Holder



G-J F-9
Door Holder
and Bumper



G-J FB-13
Dome Type
Door Bumper

For detailed description and applications of these devices, refer to our general catalog.

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Builders' Hardware Specialties for Over 25 Years

4422 N. Ravenswood Ave., Chicago 40, Illinois

HARDWARE—6: Types of Finishes

By Seymour Howard, Architect, *in cooperation with American Society of Architectural Hardware Consultants*

(*Continued from page 147*)

number of copper-nickel-zinc alloys in which the copper predominates. Monel-metal, a nickel-copper alloy in which the nickel is 67 per cent, is well known for its great durability and corrosion resistance.

Aluminum and stainless steel are not yet listed as standard finishes, but are used by some manufacturers. Aluminum is generally finished by an oxidation process, but it is also available as a base metal with plated finishes.

A full set of 18 samples of the US standard hardware finishes, marked with an asterisk in the tables, can be bought at cost ($9.00) from Mr. A. S. Best, Secretary, Advisory Committee on Standardization of Builders' Hardware, National Bureau of Standards, Washington 25, D. C.

STANDARD FINISHES FOR BUILDERS' HARDWARE

SYMBOL	GENERAL DESCRIPTION	METAL APPLIED TO	HOW PRODUCED	NOTES
*US18	Bower barff	Iron and steel	Metal oxidized at 1700 F with steam and volatile hydrocarbon liquid	Abrasion resistant. Use on interior surfaces only. Best on cast iron. Named after two inventors
*US18A	Sanded, rust-resisting black	Ditto		Corrosion resistant
*US19	Sanded, dull black	Iron, steel, wrought and cast brass or bronze		On iron and steel, same as US18A
*US20	Statuary bronze	Wrought and cast bronze (see notes)	Surface of bronze oxidized, may be scratch-brushed to lighten color	Greater variation and tolerance permitted in comparing items of this finish because of nature of finishing process. Limited on iron and steel to butts
*US25	White bronze metal	Wrought and cast white bronze	Copper-nickel-zinc alloy; analyses vary, but copper predominates	
*US25D	White bronze metal, dull	Ditto	Ditto	
US26	Chromium-plated		Brass and bronze: first nickel, then chromium-plated. Iron and steel: first copper, then nickel, then chromium-plated	Polished surfaces
*US26D	Chromium-plated, dull		Ditto	

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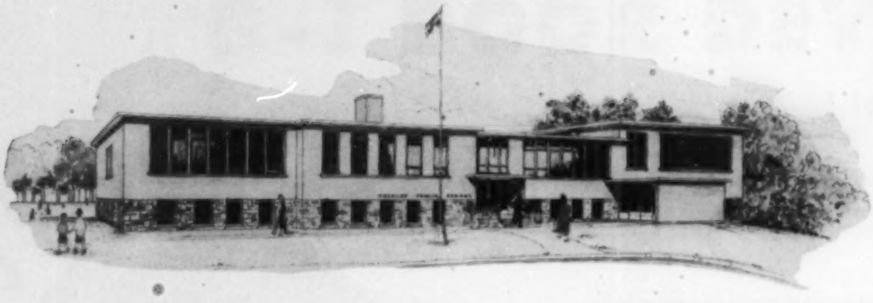
* *For explanation see text, Sheet No. 6*

(News continued from page 24)



Public school at Chesley, Ont. Above, photo of original school destroyed by fire this year. Left, rendering of new school being erected on old foundations from plans by Craig & Madill, Architects

Canada Strikes Happy Medium

In its postwar housing policy, Canada has steered a course midway between that of U. S. and Great Britain. Thus comments Central Mortgage & Housing Corporation in its quarterly review *Housing Progress Abroad.*

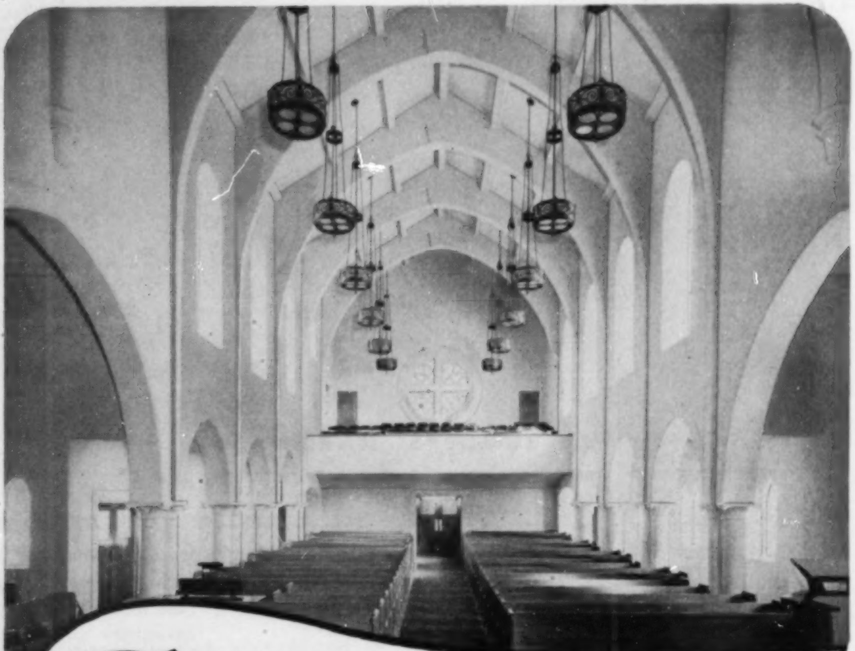
Emphasis here has been on direct financial assistance to house-builders, though public building for veterans did assume considerable importance just after the war. U. S. has relied on indirect financial assistance in the form of mortgage insurance for private building, with public housing playing a minor role. Great Britain's policy has been to concentrate on direct public housing for low income families. Due to limitations of manpower, materials and foreign exchange, there has been relatively little privately initiated house building.

House in Thorncrest Village, Toronto; one of Canada's first planned residential communities. E. C. S. Cox, Architect

Realty Sales May Taper Off

A nationwide survey of real estate values and trends recently completed by the Canadian Association of Real Estate Boards reveals that 1950 is expected to see an increase in property

(Continued on page 152)



Glued Laminated Arches

GLUED LAMINATED arches, beams or trusses open the way to unlimited expression of either traditional or modern, functional designs in ecclesiastical buildings; giving the architect as much freedom in designing as he would enjoy with modeling in clay. They are not limited in size or shape. They combine structural strength with quality to meet all appearance and finishing specifications. SUMMERBELL, a pioneer in glued laminated construction, is fully qualified and completely equipped to produce glued laminated units to fulfill all requirements... efficiently and economically. Examples of recent SUMMERBELL glued laminated construction for churches are shown in a new bulletin, available on request.

GLUED LAMINATED CONSTRUCTION, SUMMERBELL BOWSTRING TRUSSES, LAMELLA ROOFS, ALL TYPES OF TIMBER STRUCTURES

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MOST PRACTICAL AND ECONOMICAL

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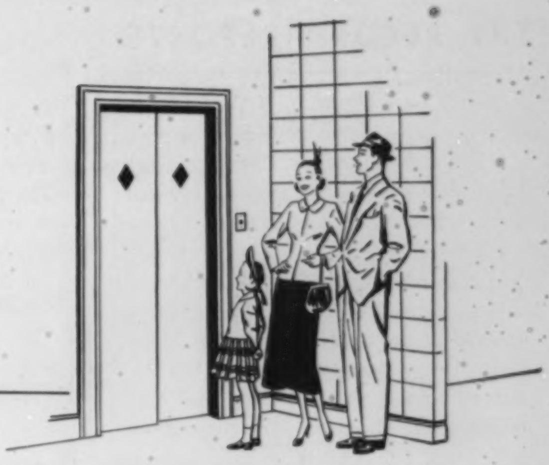
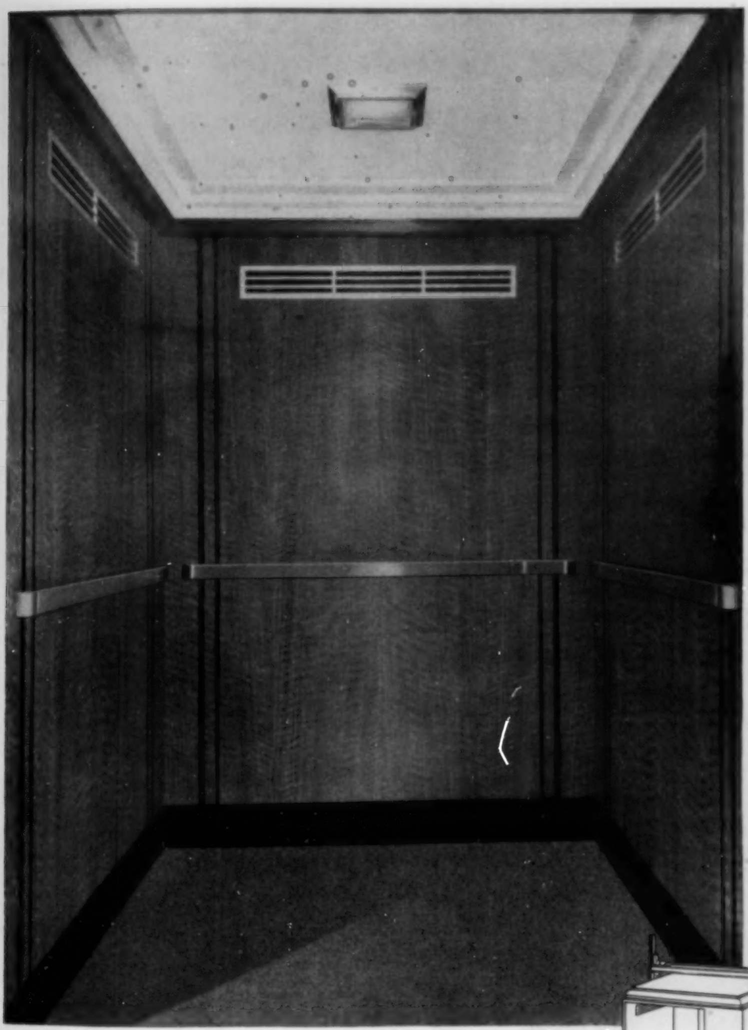
FOR 2, 3 OR 4-STORY SERVICE





Oildraulic Elevators simplify building design . . . save space, cut costs

For passenger service in modern buildings of 2, 3 or 4 stories, Rotary's Oildraulic Elevators have the following very definite advantages:

No Costly, Unsightly Penthouse — Because it's pushed up from below, not pulled from above, the Oildraulic Elevator requires no penthouse. This saves several hundred to thousands of dollars, and improves the design of the building.

Lighter Shaftway Structure—There's no need for heavy, load-bearing sidewall supporting columns and footings to carry the car, counterweight, overhead machine, and the load. Rotary's powerful Oildraulic jack supports the entire system.

No Special Machine Room—A machine room can usually be dispensed with because Rotary's compact power unit can be located at any convenient spot on any landing and on any side of the hatchway . . . under a stairway, in a closet or basement.

Smooth Operation—Smooth starts and gentle, accurate landings are proven features of the Oildraulic Passenger Elevator. The new pulsation-free pump is the quietest and most efficient ever used in this service. Oildraulic Elevators are engineered and built by Rotary, oldest and largest maker of oil hydraulic elevators.

Thousands of users can recommend Oildraulic Elevators based on actual experience. This dependable equipment is being specified by leading architects from coast to coast.

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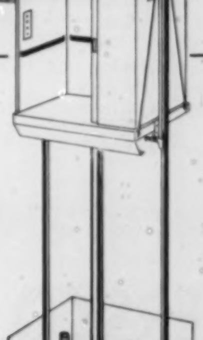
With the New Pulsation-free Pump

It's pushed up hydraulically—not pulled up



Mail Coupon for A.I.A. File 33

ROTARY LIFT CO.,
1012 Kentucky, Memphis (2), Tenn.

Send complete information on your Oildraulic Elevators for ( ) passenger service
( ) freight service.

Name...

Address...

City and State...

(*Continued from page 150*)

sales in only three cities — Toronto, London and Edmonton. Twenty other cities were covered by the survey. For them a downward trend is likely.

Prices of old residential property are declining coast to coast. But prices of new residential property are still edging upward or are unchanged in the Maritimes, Quebec, and most larger Ontario centers except Port Arthur and Fort William. For the most part, throughout the West, they are either pointing or moving downward.

The findings are based on a 50 per cent response to a questionnaire submitted to over 1400 realtors.

Hands Housewives Bouquet

The architect takes second place to the housewife when it comes to residential design. She's the boss, says D. B. Mansur, president of Central Mortgage & Housing Corporation, in a brief presented to Canada's Royal Commission on Arts & Science Development.

Mr. Mansur points out that the housewife is influenced by the advertisements she sees in newspapers and magazines. This, he thinks, is not a bad thing. "If there is room for improvement in the way people live, I believe the only way of achieving that improvement is to make the housewife want something better."

Regent Park Gets Low Bids

Downward movement of building costs is believed to be responsible for a startling reduction in the cost of three new units for Toronto's Regent Park housing scheme.

The general contract for the first 48-suite building was priced last March at $338,486. The lowest tender for three more such 48-suite units, submitted in August, was little more than twice the price for a single unit in March.

Gallery to Feature Architecture

Gordon S. Adamson has been appointed chairman of the R.A.I.C. committee in charge of arrangements for the architectural division of an exhibition to be held at the Art Gallery of Toronto in March, 1950. This exhibition, which commemorates the 50th anniversary of the founding of the Gallery, will consist of the best examples of all contemporary arts.

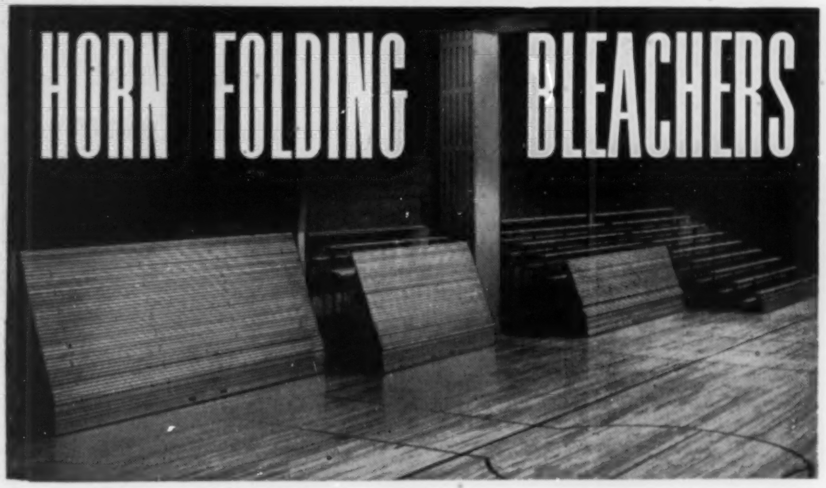
Homes for the Handicapped

As a part of its research program, the National Society for Crippled Children and Adults is gathering material on houses for the handicapped, with a view to building such a house as an experimental model. In addition, the Society has had a committee working for several years to eliminate architectural barriers to the handicapped in public buildings, and many of its state and local affiliated societies have carried on active programs in their communities. Christine Salmon, A.I.A., is architectural consultant to the Society.

The A.I.A. is at the present cooperating with the Society in obtaining material for a special article to be published in its bulletin.

Basic problem in the design of homes for the handicapped is ease of circula-

(*Continued on page 154*)



Horn Folding Bleachers and Horn Folding Partitions for Greater Space Utilization

CHECK YOUR SPACE REQUIREMENTS

ROWS	FLOOR SPACE IN USE	FLOOR SPACE *CLOSED	**HEIGHT
3	4 Ft. 9 In.	1 Ft. 8¾ In.	3 Ft. 0 In.
4	6 Ft. 7 in.	2 Ft. 0⅛ In.	3 Ft. 9 In.
5	8 Ft. 5 In.	2 Ft. 3½ In.	4 Ft. 6 In.
6	10 Ft. 3 In.	2 Ft. 6⅞ In.	5 Ft. 3 In.
7	12 Ft. 1 In.	2 Ft. 10¼ In.	6 Ft. 0 In.
8	13 Ft. 11 In.	3 Ft. 1⅝ In.	6 Ft. 9 In.
9	15 Ft. 9 In.	3 Ft. 5 In.	7 Ft. 6 in.
10	17 Ft. 7 In.	3 Ft. 8⅜ In.	8 Ft. 3 In.
11	19 Ft. 5 In.	3 Ft. 11¾ In.	9 Ft. 0 In.
12	21 Ft. 3 In	4 Ft. 3⅛ In.	9 Ft. 9 In.
13	23 Ft. 1 In.	4 Ft. 6½ In.	10 Ft. 6 In.
14	24 Ft. 11 In.	4 Ft. 9⅞ In.	11 Ft. 3 In.
15	26 Ft. 9 In.	5 Ft. 1¼ In.	12 Ft. 0 In.
16	28 Ft. 7 In.	5 Ft. 4⅜ In.	12 Ft. 9 In.
17	30 Ft. 5 In.	5 Ft. 8 In.	13 Ft. 6 In.
18	32 Ft. 3 In.	5 Ft. 11⅜ In.	14 Ft. 3 In.
19	34 Ft. 1 In.	6 Ft. 2¾ In.	15 Ft. 0 In.
20	35 Ft. 11 In.	6 Ft. 6⅛ In.	15 Ft. 9 In.

*Dimension includes 4½ In. space between top seat and wall.
**Height in open position same as closed. For Bleachers higher than 20 Rows write for complete details and dimensions.

FOR SEATING CAPACITY FIGURE 16" PER PERSON. WRITE FOR COMPLETE DETAILS ON THE "3 IN 1 HORN GYM PLAN". NO OBLIGATION

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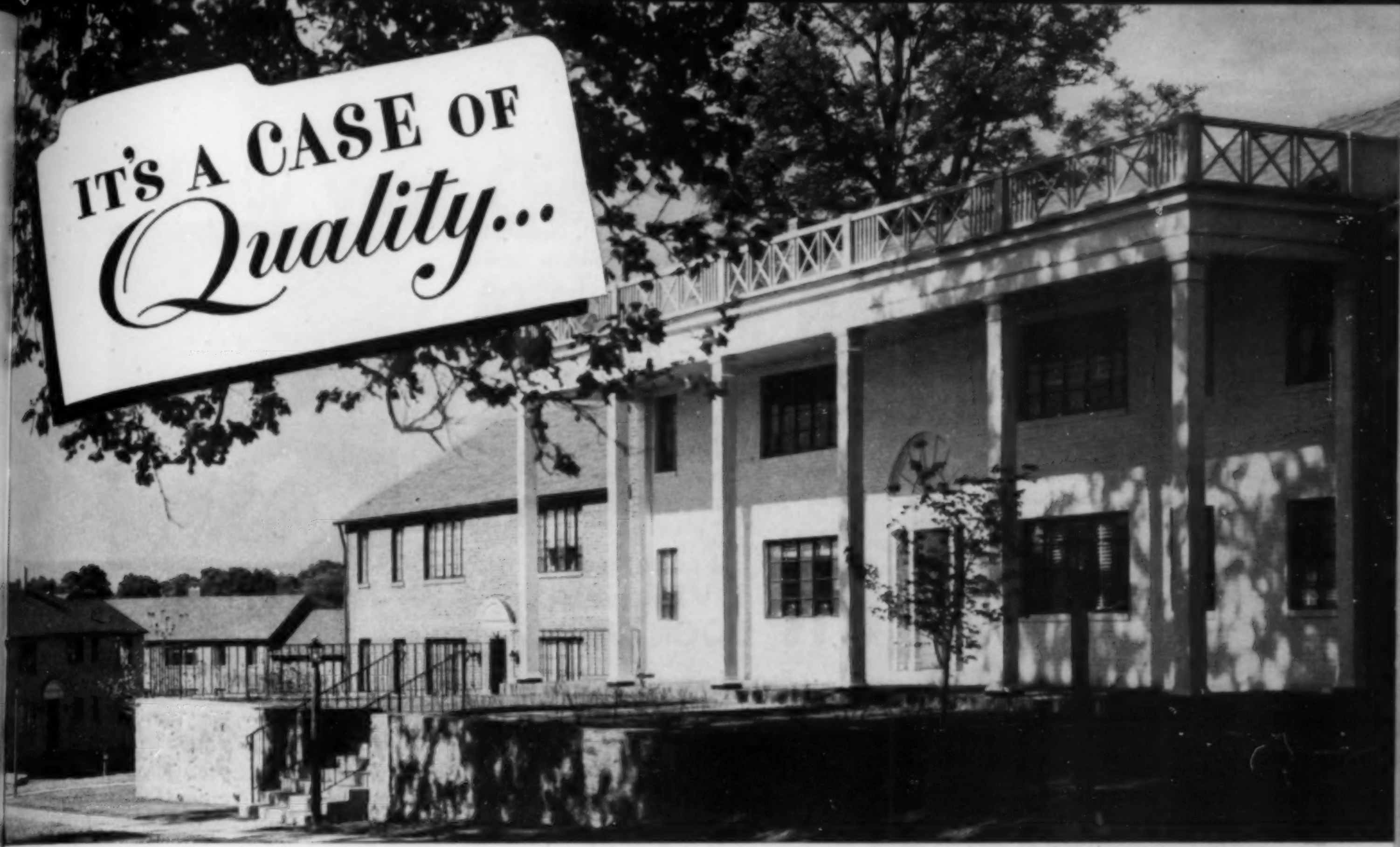

IT'S A CASE OF *Quality...*

View of *Drexelbrook,* Drexel Hill, Pa. *Architect:* James G. Ludwig, West Chester, Pa. *Builders:* Daniel G. Kelly and Fred P. Meagher, both of Upper Darby, Pa.

...with 1,223 Personalized heating systems

1,223 APARTMENTS at *Drexelbrook* are equipped with Bryant *Personalized Heating.* Shown are the Bryant Model VS-304 Winter Air Conditioner and Bryant *Red Seal* Automatic Gas Water Heater in closet installation. 50 community laundries also are equipped with Bryant Water Heaters.

New evidence of the ever-increasing acceptance of *Personalized* Heating for apartments comes from *Drexelbrook,* where the Bryant name plate appears more than two thousand times.

This 137-acre wonderland of garden-style apartments is one of the largest and most modern developments of its kind in the world. It is a product of far-sighted planning that provides unsurpassed comforts and conveniences for its occupants.

Bryant *Personalized Heating* stands high on the list of tenant advantages at *Drexelbrook.* Each family enjoys *independent, automatic control* of all heating in its own home. Living areas are never overheated, never under-heated. There is always plenty of hot water on tap—at the temperature desired by the user; for each family has its own *individual* hot water service.

Aside from its advantages for occupants of multi-family housing, Bryant *Personalized Heating* also provides these advantages for *management:*

Personalized Heating is maintained at *low* cost; large staffs of janitor-firemen or heating maintenance men are unnecessary and, in most cases, a single custodian is master of *all* equipment. Service or repair, if necessary, is entirely local, handled within a period of minutes and at *minimum* cost. Waste heat is virtually eliminated, and there are few, if any, tenant complaints.

These advantages of Bryant *Personalized Heating* benefit *all* who finance, invest in, build or manage multi-family housing. Ask the Bryant Distributor nearest you to tell you the complete story.

Let the pup be furnace man
... and water boy, too!

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"AN AID TO CONSTRUCTION"

says the Drexelbrook construction team, DANIEL G. KELLY, Realtor, and FRED P. MEAGHER, Builder

"Bryant *Personalized Heating* aids construction by affording tremendous space savings. This outstanding equipment provides the same advantages in heating for apartment dwellers as those enjoyed by occupants of individual homes."

(*Continued from page 152*)

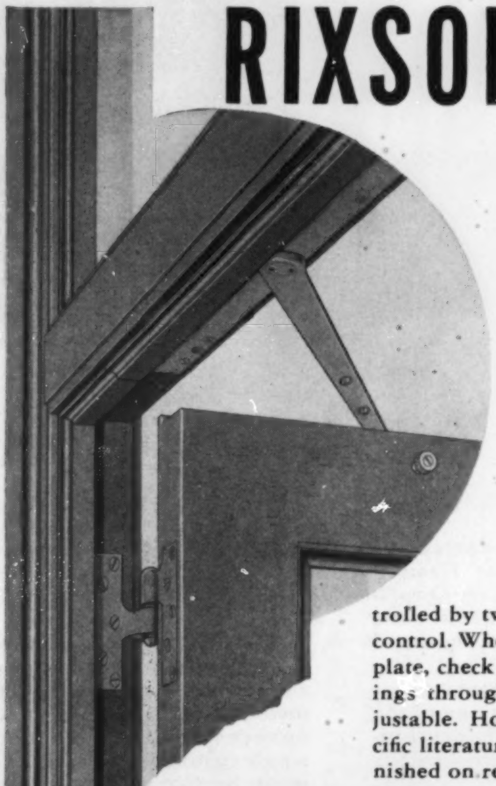
tion. Also necessary is accessibility of cabinets and interior details from a wheelchair position. Larger proportions are needed in kitchens and added railings throughout the house for those who are able to walk with braces. In public buildings, a street level entrance or a ramp where steps are part of the design have been suggested by the Society. Other ideas for the experimental house may be sent to Mrs. Nina Badenock (chairman of the committee), National Society for Crippled Children and Adults, Inc., 11 S. La Salle St., Chicago 3, Ill.

Celebrates 50 Years with Firm

Harold W. Beder, A.I.A.

The 50th anniversary of association with same architectural firm was celebrated by a dinner honoring Harold W. Beder, A.I.A., at the Architectural League on Oct. 27. A member of the firm of Chapman, Evans & Delehanty, Architects, Beder designed the Chemical Bank Building at Madison Ave. and 74th St., New York, awarded the Gold Medal of the Fifth Avenue Assn.

Current projects of the firm with which he is identified are the New York State Hospital at Central Islip, L. I., the McKesson & Robbins offices and warehouse; the Triborough Bridge & Tunnel Authority warehouses and garage.



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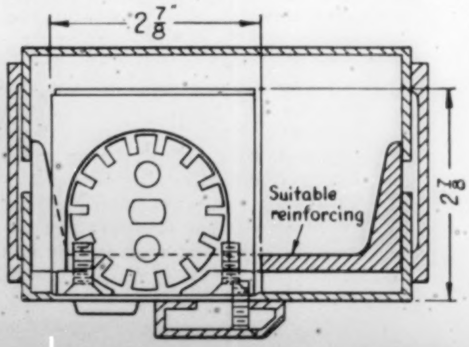

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PORTLAND, ORE.—W. N. Browning, 529 Henry Bldg., Tel. Atwater 5839.
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BRANSON V. GAMBER

Branson Van Leer Gamber, F.A.I.A., and partner in the firm of Derrick & Gamber, died October 12 in Detroit. He was 56.

Mr. Gamber was educated at Brown College, Philadelphia, and at Drexel Institute of Art and Science. In 1941 he received an honorary M.S. from Detroit Institute of Technology. Formerly employed by Day and Klauder, of Philadelphia, and in the Detroit offices of Albert Kahn, Donaldson and Meier, George D. Mason and Robert O. Derrick, Mr. Gamber formed the partnership with Mr. Derrick in 1935. The firm

(*Continued on page 156*)

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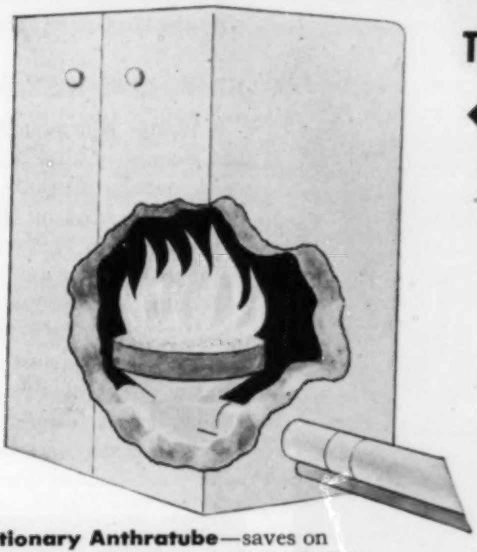
They save up to 52% annually on fuel bills



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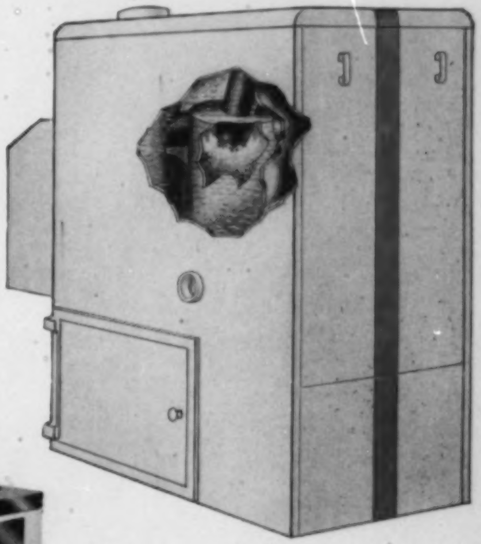

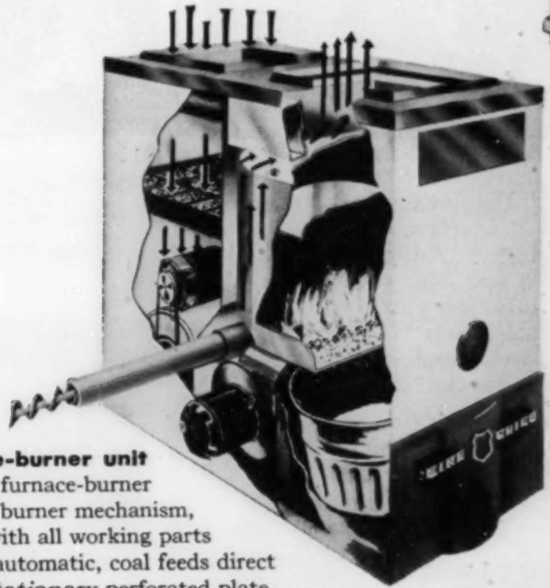

3. Anthra-Flo furnace-burner unit—An entirely new type furnace-burner which features a simple burner mechanism, attached by two bolts with all working parts easily accessible. Fully automatic, coal feeds direct from bin across single *stationary* perforated plate . . . ashes discharge by gravity into container within unit. Available for steam, hot-water and warm-air heating systems.

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Grilles and Wickets
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★

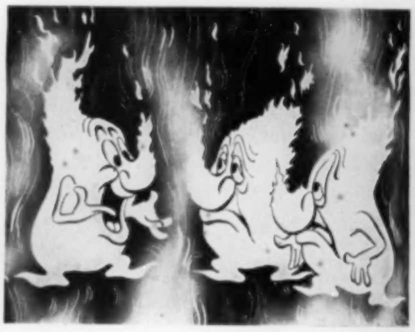
(*Continued from page 154*)

were architects for such buildings in the Detroit area as the Federal Building and Post Office, Ford Museum at Greenfield Village, Charles Godwin Jennings Hospital and the Grosse Pointe High School.

BREUER HOUSE SURVEY

A sample poll recently completed by the Museum of Modern Art reveals that most popular features of the Breuer house in the Museum Garden are its expandability, its butterfly roof and the landscaping layout around the structure.

A majority expressed approval of a house which can be built in two stages. The survey was conducted by taking a random sample of visitors going through the house, which is no longer on exhibition, during one week in September.



Jaunty The Flame, animated character starring in film, "White Magic," which dramatizes fireproof quality of gypsum

EXHIBITS

Educational Films

Currently available to the public are three short movies produced for the Gypsum Association by Hollywood's several-time Academy Award winner, Jerry Fairbanks, creator of "Popular Science Shorts" and "Speaking of Animals." Produced in 16 mm. sound-color and each about 15 mins. running time, the films are titled: "White Magic," "Gypsum Lath and Plaster," and "Gypsum Sheathing and Wallboard."

Two purposes of the films, according to the Gypsum Association, are to tell an informative and entertaining story of one of America's most widely used minerals and, second, to inform the building

(*Continued on page 158*)

Welding Cuts Dead Load 44%... Increases Space Four Times

By Walter R. Steyer, *President*
Steyer-Weisbrod, Inc., Huntington Park, California

IN remodeling the Los Angeles Coliseum Press Box, arc welding has made possible the erection of a modern, three-level structure having over four times the available space without exceeding the live and dead loads of the original building. Where the former concrete press box accommodated only 98 persons on one level with 18″ of space per person, the new, rugged, all-welded structure has generous facilities for 178 people with 42″ of space per person.

The new Coliseum Press Box has been erected through arc welding in a scheduled time of 4 months and at a cost of only $150,350.00. To achieve earthquake and wind load requirements, light steel framing and Fenestra panels are used. In erection, members are first bolted, aligned and then welded with "Fleetweld 5" electrodes using Lincoln "Shield-Arc" DC welders. The center lines of "H" columns are rigidly connected to the longitudinal beams with moment connections. Butt plates are added in the field at the top and bottom flanges of the beams supporting the Fenestra panels (Fig. 4). These in turn are continuously welded to the columns and beams.

Fig. 2. Welding type D Fenestra panels with Lincoln "Fleetweld 5" electrodes. Total dead weight of floor including ceiling and finish surfacing is only 14 lbs. per square foot.

Transversely, the horizontal forces are taken by the columns in the rear wall and the center columns. Rigid or moment connections are developed in this direction also. This approach leaves the front columns free to carry vertical loads only, allowing them to be of minimum size pipe columns so as not to impair visibility. To avoid doubling up on columns at expansion joints, the expansion joints are placed in the center of the beam spans supporting the Fenestra panels by means of cantilevering.

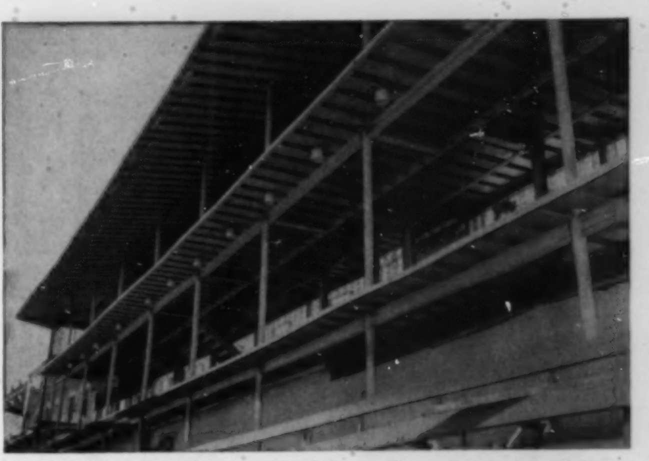


Fig. 1. All welded Los Angeles Coliseum Press Box acclaimed as the "Outstanding press box in the world." Architects: Bennett and Bennett, Pasadena, Cal.; Structural Engineer: John Case, Los Angeles; Fenestra Floor & Roof Panels: Detroit Steel Products Company, Detroit, Mich.; General Contractor: Barrett and Hilp, Los Angeles; Structural Steel and Fenestra Panel Erection: Steyer-Weisbrod, Inc., Huntington Park, Cal.

In remodeling projects of this kind, welding is decidedly preferable to riveting. Riveted design involves heavy connecting material since all of the connections are moment or rigid type.

Although the potential savings in cost through arc welding on this project were carefully considered, it was the decided saving in weight that made welded construction preferable.

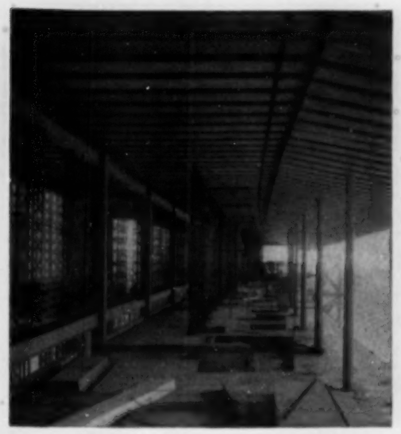


Fig. 3. Upper level shows all welded light steel frame with expanded steel studs for partitions. Front columns are pipe for maximum visibility.

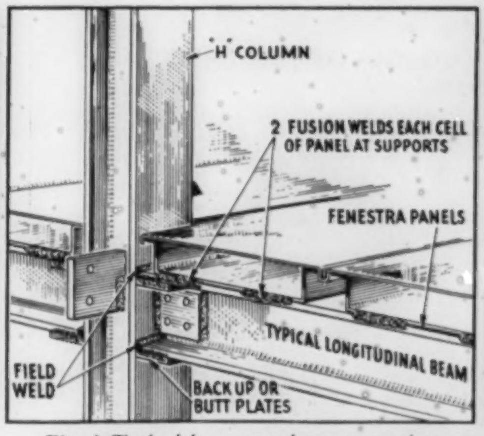

"H" COLUMN
2 FUSION WELDS EACH CELL OF PANEL AT SUPPORTS
FENESTRA PANELS
TYPICAL LONGITUDINAL BEAM
FIELD WELD
BACK UP OR BUTT PLATES

Fig. 4. Typical beam-to-column connection shows use of butt plates on beam flanges and details of Fenestra floor panels.

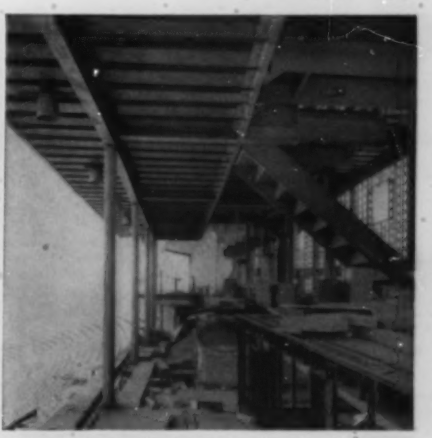


Fig. 5. Lower level showing beam and column details as well as all welded stairway. Note cantilever detail of upper flooring.

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(*Continued from page 156*)

industry and public about gypsum factors not commonly understood. In the nine months of distribution, the shorts have been viewed by 63 A.I.A. chapters, over 3000 architectural students, movie house patrons and others, totaling an audience estimated at over 12 million individuals. Cost free, they may be obtained from the Gypsum Association, 20 N. Wacker Dr., Chicago 6, Ill., or 816 W. Fifth St., Los Angeles 13, Calif.

Fuller Foundation Benefit

An exhibition and auction of the best works of over 100 Chicago artists took place recently in the Hull House Gallery. Proceeds of the event have been turned over by the artists to the (Buckminster) Fuller Research Foundation in hopes of expediting development of better low cost housing.

Bay Area Exhibit

Circulation of the Bay Area Exhibit (see Architectural Record, Sept. 1949, page 119), planned by Richard B. Freeman, assistant director of the San Francisco Museum of Art, as a survey of the best in domestic architecture in the Bay Region today and in the past, will begin in February in Portland, Ore., and will continue through 1951. Information may be obtained from The National Exhibition Service, The American Federation of the Arts, 1262 New Hampshire Ave., N. W., Washington, D. C.

A.I.A. Design Exhibit

"Contemporary Architecture in the United States 1947–1949" will be the title of the United States entry in the biennial design competition of the VII Congreso Pan-americano de Arquitectos in Havana, Cuba next April. The 60 panels now on display in the Washington Headquarters of the A.I.A. (part of 600 to be shown in Havana) were organized by the A.I.A. but are the work of 138 individual offices. Following the showing in Cuba the panels will be loaned to the Department of State for use in its worldwide information program.

Detroit Selections in N. Y.

A wide variety of articles from the exhibition, "For Modern Living," at the Detroit Institute of Arts will be shown at the Museum of Modern Art in New York under the title, "Design Show:

(*Continued on page 160*)

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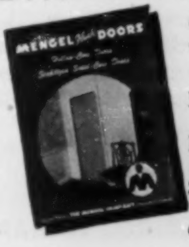

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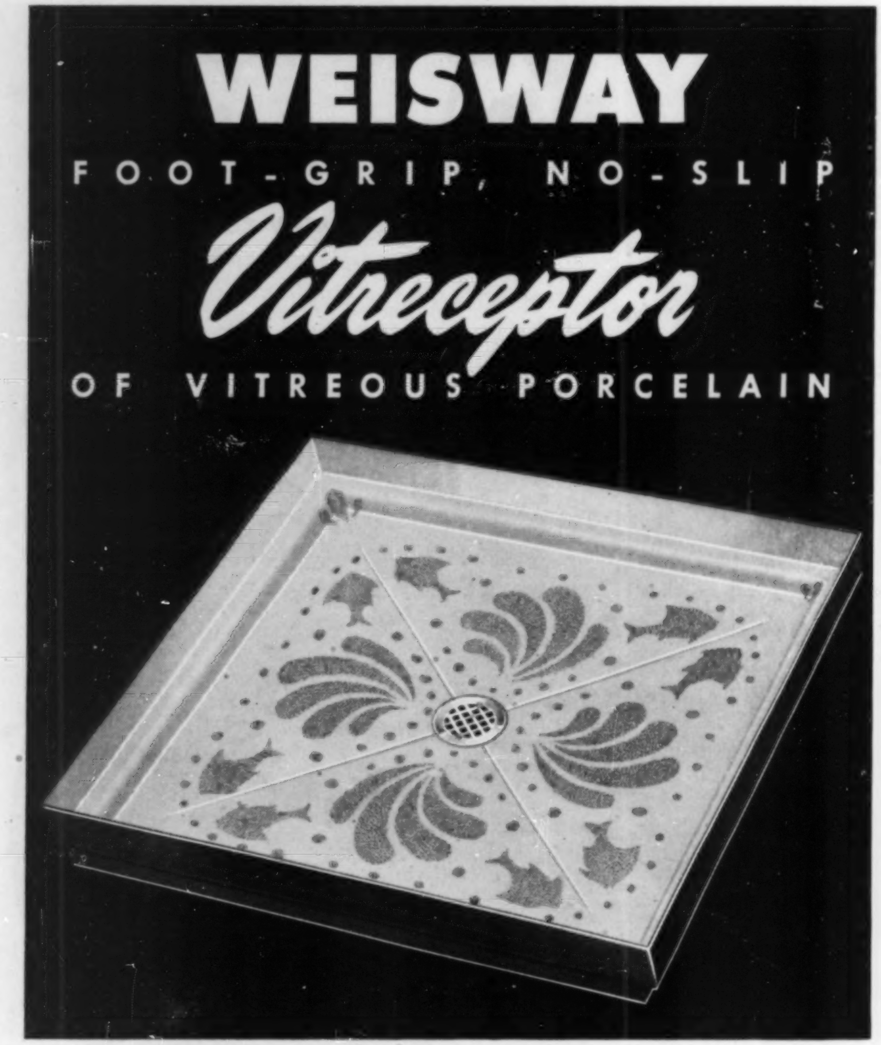

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HENRY WEIS MFG. CO., INC., 1203 WEISWAY BLDG., ELKHART, IND.

(*Continued from page 158*)

Christmas 1949." They have not been shown previously at the Museum. The exhibition continues through Jan. 8.

COMPETITIONS

Timber Design Contest

Over 1000 architects, students and others have registered their intention of submitting designs in the $5000 architectural prize competition currently being sponsored by the Timber Engineering Company for the best designs in wood of an eight-family, garden-type apartment. Closing date is January 15, 1950, and awards will be announced March 15. Information may be obtained from the Timber Engineering Company, 1319 Eighteenth St., N. W., Washington 6, D. C.

Neighborhood Plans

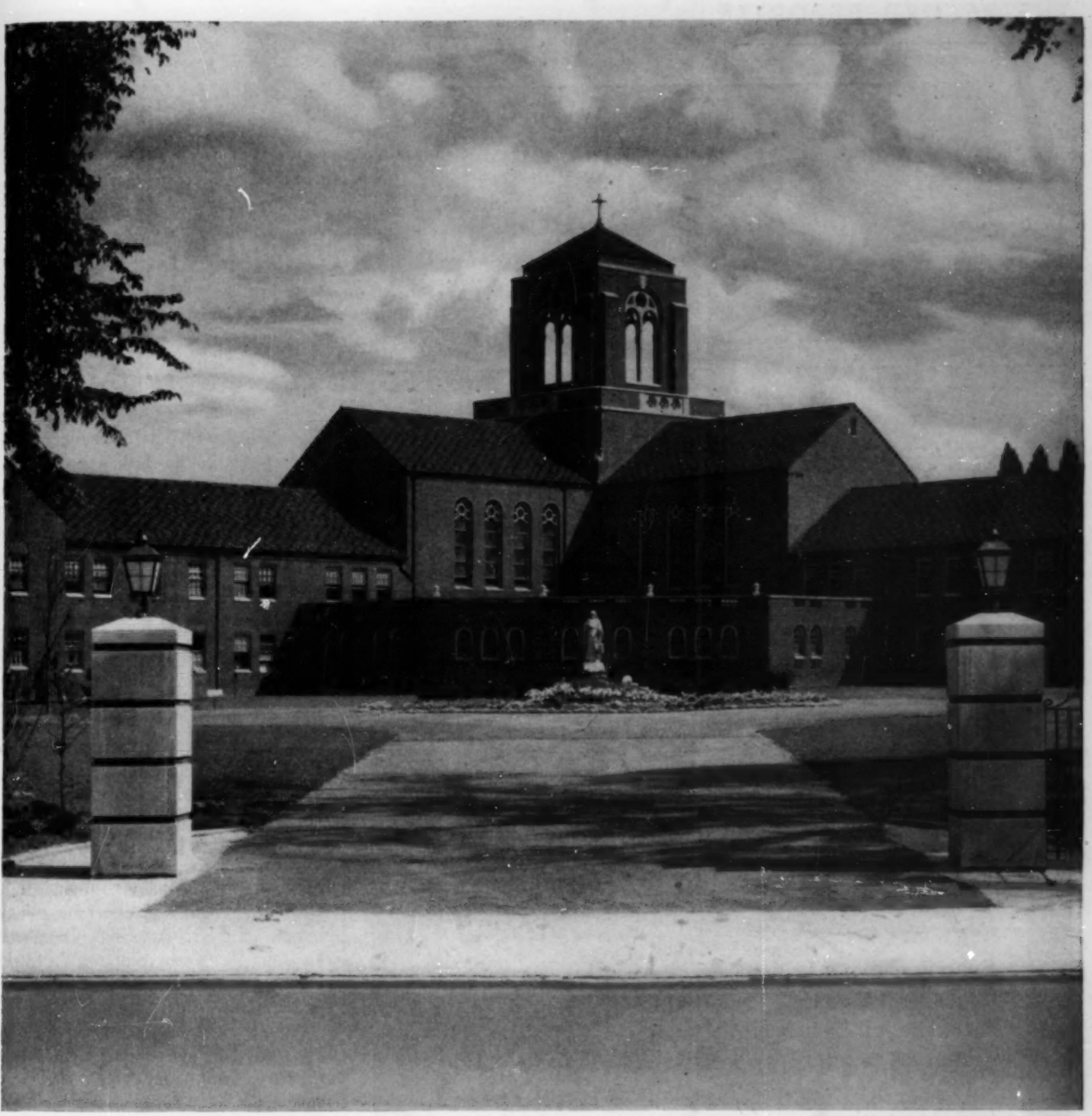
Last call for plans for the "neighborhood of the year" have been issued by the National Association of Home Builders which seeks designs for actual construction projects embodying attractive layout of homes and apartments and creating the best types of family neighborhoods, with emphasis on "economy housing."

The search for these plans has been undertaken by the N.A.H.B.'s Land Planning Committee, under the chairmanship of David D. Bohannon, California builder. Awards will be given in several classes and winning entries will be exhibited to home builders at the Association's February convention in Chicago. Project builders may submit entries through the local home building associations of the N.A.H.B.

Sign Design Contest

Cash prizes totaling $1000 will be awarded to winners of the fourth annual Electric Sign Design Competition sponsored by the National Electric Sign Association. In addition to the cash prizes, the sign company whose designer wins the highest award is to receive an especially designed and engraved Steuben Glass trophy. The contest closes December 31 and awards will be announced February 6 at the annual convention of the Association. Information may be obtained from the National Electric Sign Association, 224 S. Michigan Ave., Chicago 4, Ill.

(*Continued on page 162*)

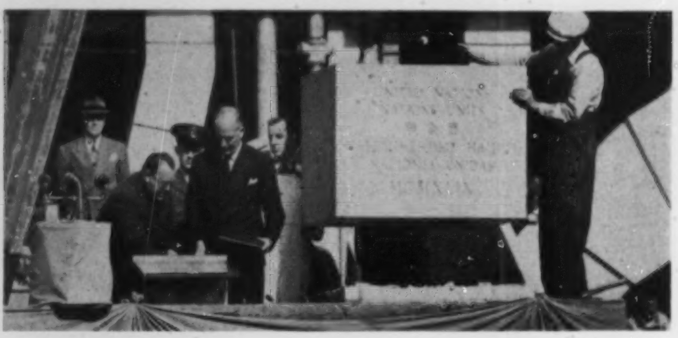


School and Convent Near Cleveland Built With Open-Web Joists—These serene red-brick buildings are part of a large school and convent constructed recently at Wickliffe, Ohio, for the Sisters of the Good Shepherd. The project is known as Marycrest School, and consists of a chapel, two supervisory buildings, three residence halls, a school containing a gymnasium-auditorium, and a clinic. Bethlehem Open-Web Joists are used throughout, in combination with concrete floor slab and plaster ceilings. This construction is non-combustible and economical. It reduces the need for firewall subdivisions, and makes possible floors which are shrink-proof, immune to attack by vermin, and sound-resistant. It also simplifies the work of allied trades, as pipes and wiring can be run through the webs of the joists. Complete data about Bethlehem Joists is contained in Sweet's. *Architects and Builders:* Walter Butler Company, St. Paul, Minn.

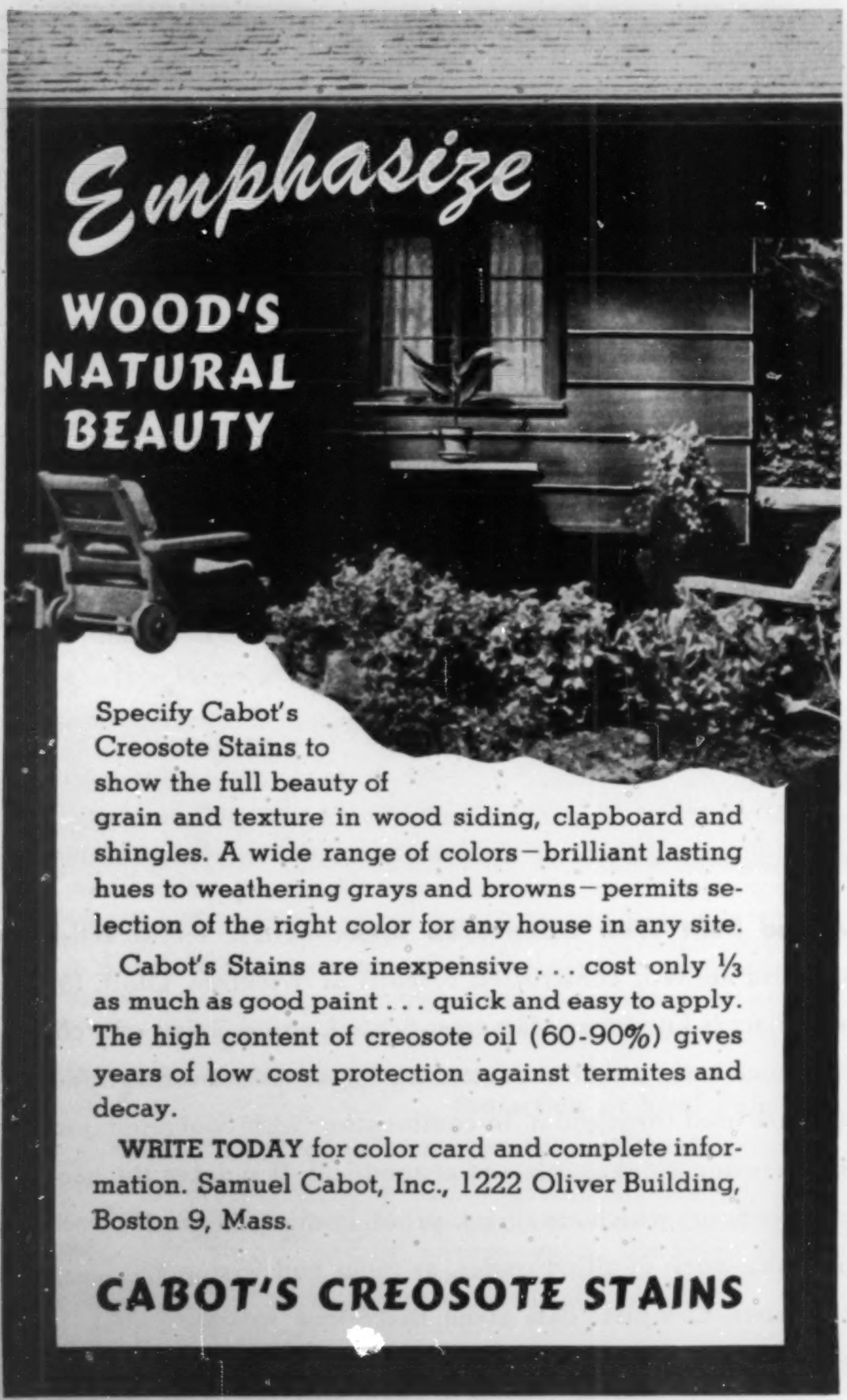
BETHLEHEM
STEEL

(*News continued from page 160*)

Acme Photo



Cornerstone laying at the United Nations headquarters in New York City. Secretary-General Trygve Lie (left), of Norway, assisted by Wallace K. Harrison, A.I.A., chief planning officer, places historical documents in steel box to be sealed in cornerstone



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WRITE TODAY for color card and complete information. Samuel Cabot, Inc., 1222 Oliver Building, Boston 9, Mass.

CABOT'S CREOSOTE STAINS

A.I.A. Survey Planned

The appointment of a special commission to study architectural education and registration has been announced by Ralph Walker, president of the A.I.A. Work of the commission will be financed by funds previously provided by the Carnegie Corporation to the A.I.A. for general educational purposes.

Dr. Edwin S. Burdell, director of Cooper Union, will be general director and chairman of the survey. Architect members of the commission, representing general practitioners, state registration boards, architectural schools and the National Architectural Accrediting Board, are: Walter Rolfe, of Houston, Tex.; Walter Kilham, New York, N. Y.; Ernest Kump, San Francisco, Calif.; Clinton H. Cowgill, Blacksburg, Va.; George Cummings, Binghamton, N. Y.; Fred Lewis Markham, Provo, Utah; Dean B. Kenneth Johnstone, Pittsburgh, Pa.; Dr. Turpin C. Bannister, Urbana, Ill.; Dean Sidney W. Little, Eugene, Ore., and Prof. Roy Jones, Minneapolis, Minn.

No one element of the profession will be under study, but a major concern of the survey will be problems of the post-college interne period and examinations for registration. Findings of the commission will be coordinated in the Department of Education and Research of the A.I.A. in Washington.

ERRATUM

Through an error which the Record regrets, improper credits were listed for the drawings on pages 141 and 144 of the November issue, in the article "Harvard Problem Based on John Hancock Site." The drawings were the work of Gourley, Stone, Anderson and Pilcher. On page 134 of the same issue, the name of Mr. Ferguson was incorrectly spelled.

(*News continued on page 164*)

NO EXTRA CHARGE FOR 14 TO 20 GAUGE STEEL PARTS
THERE'S
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FOR THESE EXTRAS WHEN YOU BUY...
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NO EXTRA CHARGE FOR FULLY COMPENSATED BALLASTS

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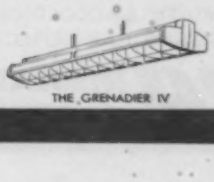
THE STAR

THE GRENADIER II


THE GRENADIER IV

THE COMMODORE

Condensation . . . Severe Problem

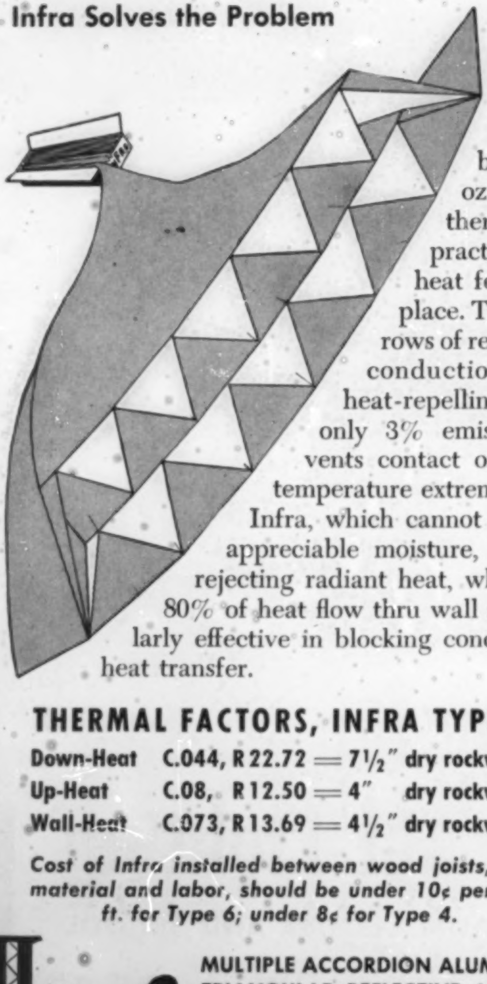
"Condensation . . . severe problem in the tightly built, well-insulated, high humidity homes of today . . . The meeting place of warm and cold is moved inside the house, usually somewhere in the outer layer of the insulation or between the insulation and the sheathing. The vapor then collects inside the attic or the walls and the result is plenty of trouble.

"Wet spots on the ceiling or walls, as the moisture flows down from the cold attic space; falling plaster as an end result; constant and repeated paint failures on the outer walls and gable ends; and rotting rafters, joists, studs, sheathing, and shingles or siding; these are only too common and costly results of the over-insulated, under-moisture-proofed home.

"The easiest solution, of course, is the inclusion of a good vapor barrier when the house is built . . . A series of laboratory tests made by the Forest Products Laboratory and the University of Wisconsin in 1947 . . . Aluminum foil had by far the best rating as a vapor barrier."

From "Weather-Conditioning of Roofs for Residences" by Groff Conklin, "Progressive Architecture," Nov. 1949.

Infra Solves the Problem



INFRA Insulation, Type 6, is an impermeable vapor barrier, it weighs but 1¼ oz. per sq. ft. With so little thermal capacity there is practically no exchange of heat for condensation to take place. The construction—4 inner rows of reflective air cells of slight conduction, between 3 radiant-heat-repelling aluminum sheets of only 3% emissivity, effectively prevents contact of condensation-forming temperature extremes.

Infra, which cannot form, absorb nor store appreciable moisture, has 97% efficiency in rejecting radiant heat, which represents 65% to 80% of heat flow thru wall spaces. It is also singularly effective in blocking conduction and convection heat transfer.

THERMAL FACTORS, INFRA TYPE 6

Down-Heat	**C.044, R 22.72**	**= 7½" dry rockwool**
Up-Heat	**C.08, R 12.50**	**= 4" dry rockwool**
Wall-Heat	**C.073, R 13.69**	**= 4½" dry rockwool**

Cost of Infra installed between wood joists, for material and labor, should be under 10¢ per sq. ft. for Type 6; under 8¢ for Type 4.

For documented details and a free copy of "Moisture Condensation in Building Walls," a bulletin of the National Bureau of Standards, Write Infra, Dept. AR

MULTIPLE ACCORDION ALUMINUM & TRIANGULAR REFLECTIVE AIR CELLS

Infra INSULATION, INC.
10 Murray St., N. Y., N. Y.

(*Continued from page 162*)

ON THE CALENDAR

Jan. 16–19: Plant Maintenance Show, sponsored by American Society of Mechanical Engineers and Society for Advancement of Management, Auditorium, Cleveland, Ohio.

Jan. 18–20: Annual Meeting, American Society of Civil Engineers, New York City.

Jan. 18–Mar. 5: Mies van der Rohe Model, exhibition, Museum of Modern Art, New York City.

Jan. 23–27: Southwest Air Conditioning Exposition of the International Heating and Ventilating Exposition, State Fair Park, Dallas, Tex.

Jan. 30–Feb. 3: 25th semi-annual Los Angeles Furniture Market, Los Angeles, Calif.

Feb. 19–23: Sixth Annual Convention and Exposition, National Assn. of Home Builders, Stevens and Congress Hotels, Chicago, Ill.

AT THE COLLEGES

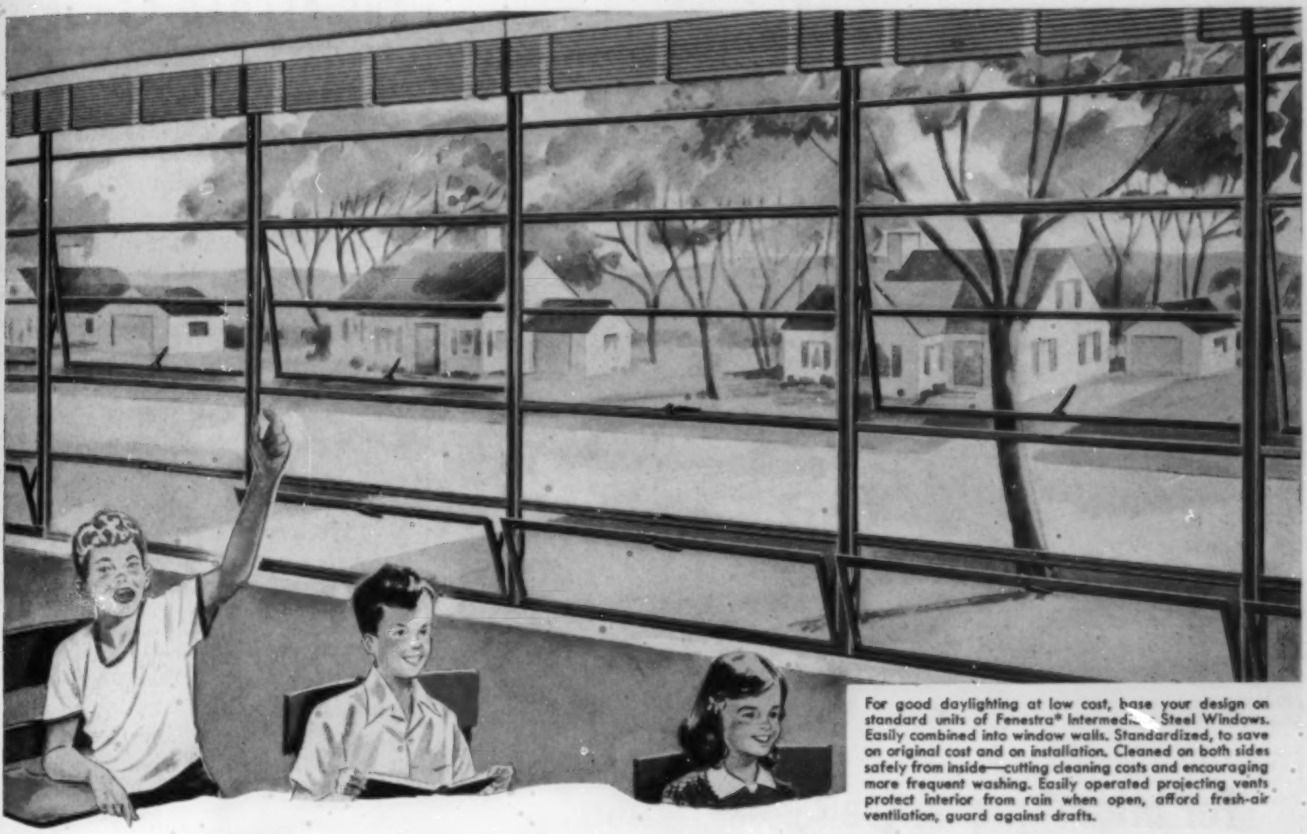
Cooper Union Anniversary

Frank Lloyd Wright and Brig. Gen. David Sarnoff, Chairman of the Board, Radio Corporation of America, were awarded Peter Cooper Medals for the Advancement of Science and Art at convocation ceremonies honoring Cooper Union's 90th anniversary on November 2. Principal speaker of the evening was Dr. Vannevar Bush, President of Carnegie Institution, who gave an address on "Human Enterprise."

Comments

The Dean of the Harvard School of Design has declared that housing projects are "segregating" groups of people from the lives of American cities. Present-day projects, Dean Joseph Hudnut explained, "are institutions set into the city, not parts of the city. Their occupants are more like inmates than citizens . . . Like orphans they live apart, blissfully havened from the tumult and peril of the city's streets." Dean Hudnut proposes that these projects be broken up into small units widely separated over a considerable area and scattered among ordinary housing operated by private enterprise.

(*Continued on page 166*)



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How to improve the quality of daylight to avoid annoying glare.

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1. What constitutes better classroom lighting.
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3. Use of window shading to meet changing light conditions.
4. Use of room decoration for improving daylight *quality.*
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For further information *on the uses of Atlas White Cement, see SWEET'S Catalog, Section 4B/3 and 13C/5, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.*

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Sunday Evenings—NBC Network

(*Continued from page 164*)

"The people who live in these units should be invited to improve, not change, their way of life, which would remain as before, integral with that of the community." Dean Hudnut also called for including streets, shops, schools and churches in housing projects. "In that way," Dean Hudnut said, "my project should be seasoned with variants; it should be tied into the city . . . and if as a consequence it lost some of its architectural unity . . . that loss might be generously compensated by a relevance to social objectives which far transcend mere 'decent living standards'."

Dr. Henry T. Heald, president of Illinois Institute of Technology, in his annual report to the Institute's board of trustees, urged technological institutions to maintain strong departments in the so-called liberal education field so that every student may enrich his professional learning with social studies and the humanities. In a review of the year's progress at Illinois Tech, Dr. Heald noted an increase in study at the graduate level, a levelling off of undergraduate enrollment, and an undiminished enrollment in evening classes by employed men and women seeking professional advancement through further education.

Exchange Invitation

The School of Design at North Carolina State College and Harvard University have been invited to begin an exchange of professors with the Architectural Association School of the University of London.

New Columbia Property

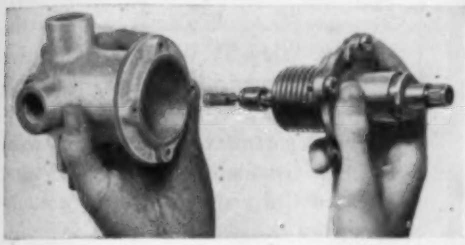
Columbia University has begun steps toward acquisition of property on W. 125th St. near Riverside Drive, as a phase of its projected Engineering Center. Over $100,000 has been pledged by alumni towards the purchase of the Sheffield Farms Co. building, standing on the property, which would be converted to a laboratory.

Scholarships

The American Academy in Rome is offering a limited number of fellowships for students in classical studies, architecture, landscape architecture, musical

(*Continued on page 168*)

Bathers can really relax and enjoy a Powers regulated shower. No danger of scalding. No unexpected temperature changes



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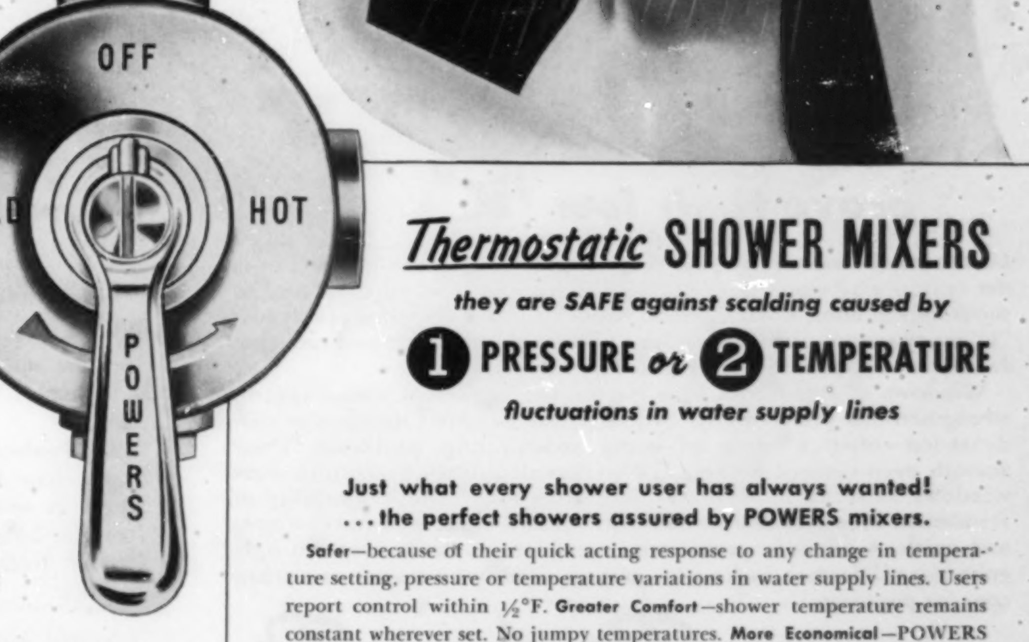
For exposed piping
Dial diameter 3¼"



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City......................Zone.....State.......

(*Continued from page 166*)

composition, painting, sculpture and the history of art. Fellowships are for one year, beginning October 1, 1950. Research fellowships amount to $2500 a year and residence at the Academy. Requests for details should be submitted to Miss Mary T. Williams, Executive Secretary, American Academy in Rome, 101 Park Ave., New York 17, N. Y.

The Department of Landscape Architecture, Graduate School of Design, Harvard University, is offering a scholarship for the academic year, 1950–51, carrying a stipend of $600, the equivalent of tuition.

Two graduate fellowships for study of additives have been established at the University of Kentucky, Lexington, Ky., by the Solvay Division of Allied Chemical & Dye Corp. The fellowships involve the grant of approximately $4000 for one year.

Announcement has been made of the Lloyd Warren Scholarship for 1950 of the Beaux-Arts Institute of Design. The scholarship provides for a year's study abroad, six months of study in the U. S. and the stipend of $5000. Inquiries may be directed to the Committee on Scholarships of the Beaux-Arts Institute of Design, 115 E. 40th St., New York 16, N. Y.

Special Courses

A 30-week course in hospital construction and alterations is being held at Columbia University through May 22.

The Producers' Council and the New Jersey Home Builders Association have joined in sponsoring the Light Construction Industry Course at the City College Intensive Business Training Program.

Faculty Appointments

Alfred A. Aydelott, of Memphis, Tenn., Harris Armstrong, of St. Louis, Mo., and Harwell H. Harris, Los Angeles, Calif., have been appointed visiting critics in the Yale University Department of Architecture. King Liu Wu has been named an assistant professor of architecture, Robert R. K. Russell, instructor in architecture and Theodore Hood, assistant in instruction in architecture.

E. Maurice Bloch has been appointed

(*Continued on page 170*)

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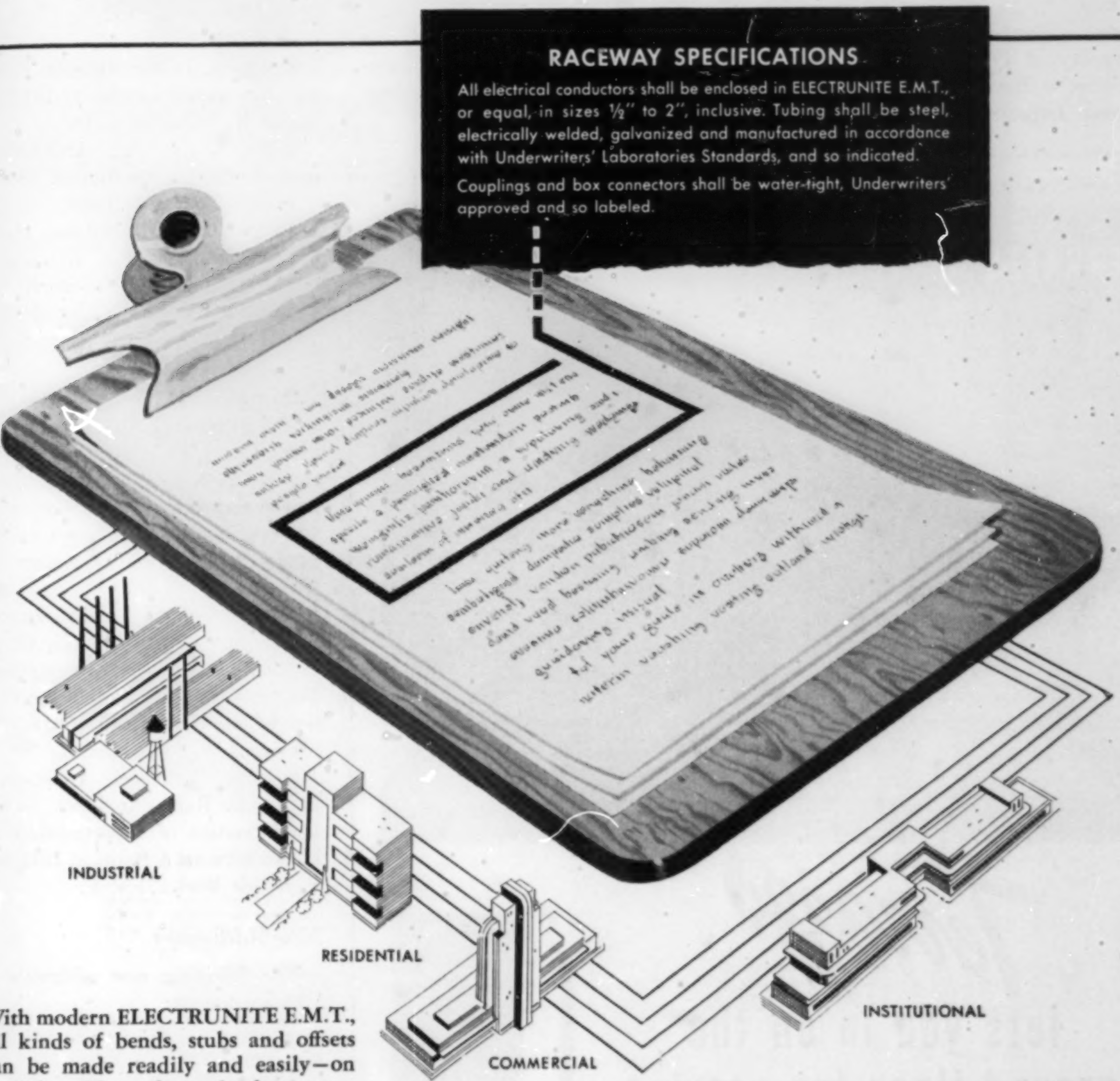

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LIGHTWEIGHT THREADLESS RIGID STEEL RACEWAY

(Continued from page 168)

Keeper of Drawings and Prints at the Cooper Union Museum for the Arts of Decoration.

J. Robert Buffler has been appointed chairman in the Department of Architecture and Planning of the University of Texas.

Knut Lonberg-Holm, graduate of the University of Copenhagen, Denmark, continues as Research Director, Sweets Catalog Department, F. W. Dodge Corp., while serving as a visiting lecturer in architecture at the University of Michigan.

Ernest J. Kump, A.I.A., Eldridge T. Spencer, A.I.A., and Albert Henry Hill have been appointed lecturers in architecture at Stanford University.

Gordon A. Phillips, Registered Architect, has recently been appointed associate professor of architecture at Montana State College.

OFFICE NOTES

Offices Opened, Reopened

William M. Cooley, A.I.A., announces the opening of an office for the practice of architecture at 162 N. Clinton St., Chicago, Ill.

Erling G. Dollar, Registered Architect, has opened an office at 1011 Washington St., Wilmington, Del.

Hollis Logue, Jr., Architect, has opened offices in the Burrell Bldg. 246 S. First St., San Jose, Calif.

William F. Ryan and James D. Ryan, Consulting Engineers, announce the opening of offices of the newly formed Ryan Engineering Co., at 114½ W. Iron St., Salina, Kans.

New Firms, Firm Changes

The corporate name of Kaiser Engineers, Inc., of Oakland, Calif., has been changed to Kaiser Industries, Inc. The engineering and construction division will continue to do business as Kaiser Engineers, a division of Kaiser Industries, Inc.

John H. Samuels, A.I.A., announces the continuation of practice as an individual at 211 N. Champion St., Youngstown, O., following the dissolution of the partnership of Owsley and Samuels.

Herman H. Siegel, Architect, and Ernest D. Rapp, Architect, announce the formation of a partnership to be known as Siegel & Rapp, at 1841 Broadway, New York 23, N. Y.

New Addresses

The following new addresses have been announced:

Arnold A. Arbeit, A.I.A., 154 Nassau St., New York 7, N. Y.

Richard Bradshaw, Designer, 1319 New Hampshire Ave., N.W., Washington 6, D. C.

Paul G. Brassard, M.R.A.I.C., 1440 St. Catherine St. W., Montreal 25, Que.

John Hall Brown, A.I.A., and Jay Lowe Chapman, Architect, M & P Nat'l Bank Bldg., Sherman, Tex.

Robert N. Eddy, A.I.A., 1700 19th St., Bakersfield, Calif.

Ross Frankel Company, Designers and Builders, 137 Fifth Avenue, New York 10, N. Y.

Theo. W. Rust, Architect, 715 S. 6th St., Pekin, Ill.

(Continued on page 172)

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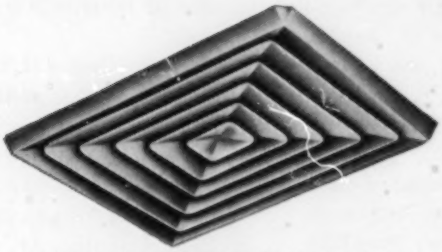

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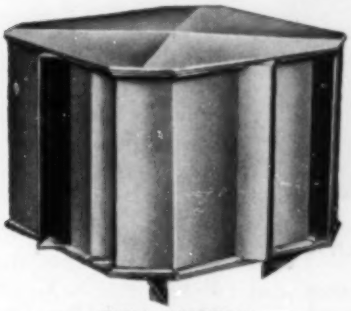

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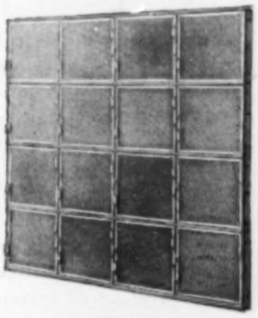

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(*Continued from page 170*)

Elections, Appointments

Egmont Arens, New York industrial designer, has been elected president of the Society of Industrial Designers for the coming year. He succeeds Harold Van Doren of Philadelphia.

James M. Ashley, of Toledo, O., has been reelected president of the Producers' Council, national organization of building product manufacturers. Other officers renamed are: A. Naughton Lane, of St. Louis, Mo., first vice president; Elliott C. Spratt, of St. Joseph, Mo., second vice president, and Charles A. Snyder, of Brooklyn, N. Y., secretary. F. J. Close, of Pittsburgh, Pa., was elected treasurer.

Paul G. Burt, of the Chicago firm of Fugard, Burt & Wilkinson, Architects, has been appointed honorary consulting architect to Guy's Hospital, London, during its reconstruction. This war-demolished hospital will accommodate 800 beds.

Maj. Gen. Charles H. Corlett, U.S.A. retired, has been appointed vice president of the Texas Housing Company, Dallas, Tex., and of New Mexico Housing Company, Santa Fe.

Rene d'Harnoncourt, chairman of the Museum of Modern Art's Coordination Committee, has been elected Director of the Museum. He has also been director of its curatorial departments and has thus held a position analogous to that of Director.

B. J. Fletcher has been named assistant chief hydraulic engineer for Aluminum Company of America. A graduate of M.I.T., Mr. Fletcher is a member of A.S.C.E. and the Society of Naval Architects and Marine Engineers.

O. B. J. Fraser, assistant manager, development and Research Division, the International Nickel Company, Inc., has been elected president of the American Welding Society for the coming year.

Carl H. Kraeling of Yale University has been appointed director of the Oriental Institute of the University of Chicago.

R. E. Mayes of Carthage, Mo., has been elected president of the Marble Institute of America to serve until the 1950 convention of the Institute. Other officers elected are: A. A. Landi, of Long Island City, N. Y., vice president; F. L. McGratty, of Brooklyn, N. Y., secretary and G. W. Oehmcke, of Milwaukee, Wis., treasurer.

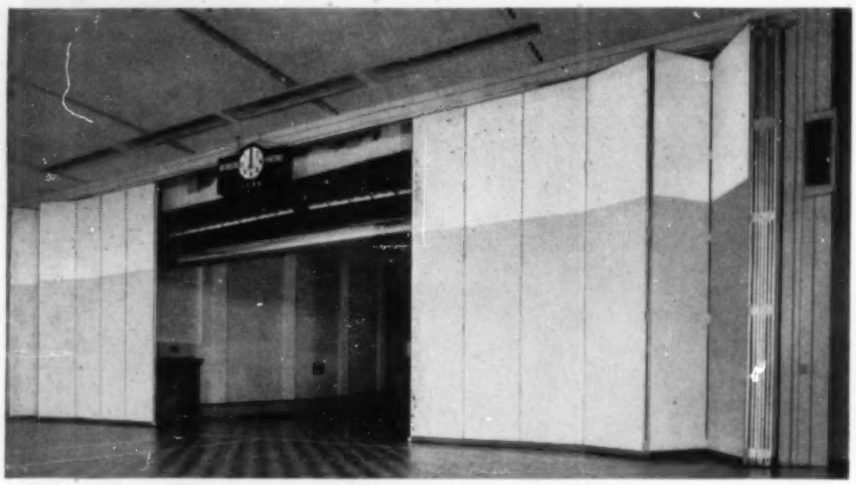
E. J. Ridder, Engineer, has been appointed to the staff of Reynolds Metals Company. Mr. Ridder is a recognized European authority on aluminum design work.

Charles C. Platt, A.I.A., former president of the Municipal Art Society, has been elected a director of the Citizen's Housing and Planning Council of New York.

Donald R. Wadle has resumed the position of commissioner of the Metal Lath Manufacturers Association, Cleveland, following a year's leave of absence because of illness.

Edgar B. Wilson, formerly structural field engineer with the Portland Cement Association's Oklahoma City office, has been named district engineer in charge of the Association's new office in Salt Lake City, Utah.

Space Savers...
FOR SCHOOLS LARGE OR SMALL

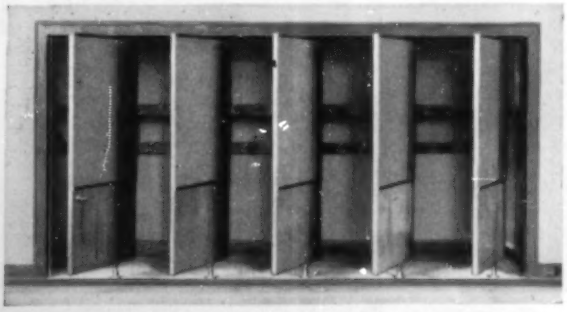


R-W DeLuxe FoldeR-Way Partition ***Automatic—Electric***

Specifically designed for school gymnasiums, auditoriums, stages, and other high or wide openings which must be closed against both light and sound, DeLuxe FoldeR-Way partitions by Richards-Wilcox are completely automatic and cost less than many manually operated partitions. To economize in space and expenditures, consider R-W DeLuxe FoldeR-Way partitions in your building or remodeling plans.

R-W No. 883
Multiple Action
School Wardrobe

An outstanding feature of Richards-Wilcox Classroom Wardrobes is that the entire unit is designed to avoid overcrowding. The hat and coat racks accommodate eight or ten pupils for each door. Note slate blackboards mounted on wood doors.



For complete information about R-W DeLuxe FoldeR-Way Partitions and Multiple Action School Wardrobes, contact our nearest office.

Richards-Wilcox Mfg. Co.
"A HANGER FOR ANY DOOR THAT SLIDES"
AURORA, ILLINOIS, U.S.A.
Branches: New York Chicago Boston Philadelphia Cleveland Cincinnati Washington, D. C. Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City Los Angeles San Francisco Denver Seattle Detroit Atlanta Pittsburgh

1880 RICHARDS WILCOX R-W AURORA 1949 ®
OVER 69 YEARS

ZONOLITE PLASTER ELIMINATES 2,500,000 LBS OF DEAD WEIGHT!

New Miami Beach Hotel ...Built in Eight Months

America's most modern new hotel, Miami Beach's Saxony, uses Zonolite vermiculite plaster throughout. This plaster, used on walls and ceilings, was lighter, cleaner, easier to handle than sand. This was an important factor in the 8-month speed record made on this 15-story building. And Zonolite plaster reduced dead load—2,500,000 pounds.

But most important, Zonolite plaster blocks heat passage and checks the spread of fire up to four times as long.

Zonolite plaster resists checking and cracking. Walls won't chip when nails are driven into them—an important feature in hotels or in any structure.

SAXONY
SAXONY

Architect, Roy F. France & Son, Miami Beach; contractor, the Taylor Construction Co., Miami; plastering contractor, John Thompson & Son, Miami.

How This Aggregate Saves Time, Money, and Weight on Any Job!

Architects everywhere, not only on large projects, but on jobs of all sizes, are specifying Zonolite plaster aggregate. The Builder finds it a saver of time, work, and money. It's so much lighter than sand, so much cleaner, so much easier to handle. No frozen sandpiles to be thawed out and hacked up. The Owner is more satisfied with the plaster job done with Zonolite plaster. Walls and ceilings are more fireproof, sound-deadening and insulating. They resist cracking. Walls won't chip when nails are driven into them!

Investigate *all* the possibilities of Zonolite now. Learn about its fireproofing, insulating, soundproofing qualities. Send coupon below for free literature. See how you can save money and time, and give the owner a better job by specifying Zonolite.

ZONOLITE
TRADE MARK REG. U. S. PAT. OFF.
BRAND
VERMICULITE
INSULATION

ZONOLITE COMPANY
135 South La Salle Street
Chicago 3, Illinois

MAIL COUPON FOR DETAILS

ZONOLITE COMPANY
Dept. AR-129, 135 S. LaSalle St., Chicago 3, Illinois
Please send me *all* the facts about Zonolite vermiculite plaster.

Name..
Address..
City........................ *State*..............

PRODUCTS

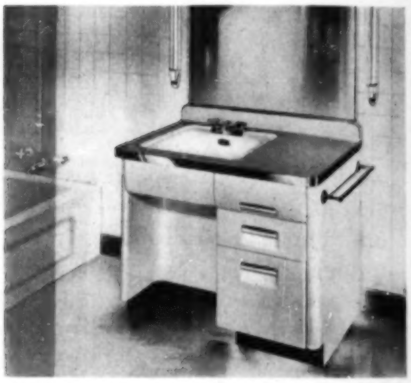
(*Continued from page 142*)

or exposure, and that it may be used with sponge rubber cushions or varnished and lacquered surfaces without damage to either. No special handling is reported necessary for cutting, sewing or tacking the fabric. Du Pont Co., Fabrics Div., Fairfield, Conn.

Aluminum Windows

Fleetlite, a prefabricated aluminum window, incorporates double hung sash, storm sash and screen in one unit. Essentially a double, double-hung window, the unit features overhead metal tape balancers, Velon plastic screening, pile mohair weather-stripping backed by sponge rubber strips, and glass panes set in Koroseal mounts. Sash is made from narrow extruded aluminum sections and snaps out for cleaning from the inside. Adjustable anchor clips are provided for nailing to studs. Flanking or corner mullions are made for various window unit combinations.

The manufacturers claim that the windows will not stick, warp or leak. Fleet of America, Inc., 110 Pearl St., Buffalo 2, N. Y.



Compact lavatory includes dressing table

Lavatory-Vanity

A compact, low-priced, combination dressing table, lavatory and medicine cabinet is announced by the Toledo Desk & Fixture Co. The plastic topped *Lavenet* is equipped with a cosmetics drawer with two lift-out trays, a medicine drawer with horizontal racks and hidden catch, storage compartment for towels, concealed wastebasket, and a towel bar. Finished in white, the steel unit has concealed plumbing, rounded corners, chrome finished faucets and a choice of blue linen or mother-of-pearl for the top. Beauty Queen Div., Toledo Desk & Fixture Co., Maumee, Ohio.

Fire Barrier Partition

A newly developed 1½-in. solid partition for non-bearing walls, reported an effective one-hour fire barrier, was introduced recently at the annual convention of the Contracting Plasterers' International Association. Expected to prove

(*Continued on page 176*)

AZPHLEX ASPHALT TILE
ANSWERS THE 5 BIG IMPROVEMENTS
REQUESTED BY ARCHITECTS

YOU ASKED FOR:
- MORE RESILIENCY — and AZPHLEX has it!
- GREATER COLOR VARIETY — and AZPHLEX has it!
- GREASE RESISTANCE — and AZPHLEX has it!
- LIGHTER COLORS — and AZPHLEX has them!
- BRIGHTER COLORS — and AZPHLEX has them!

AZPHLEX
ASPHALT TILE

AZPHLEX offers maximum resistance to the effects of animal, mineral and vegetable greases, alkalis, alcohol and mild acid solutions. It will not soften or discolor in contact with these usually harmful agents. Its resistance to indentation from rolling or standing loads is equally high, and it is immune to the scuffing and scarring associated with daily traffic.

AZPHLEX colors are through-and-through — a wide range of clear, sharp colors that offers an unusual selection of color and pattern combinations. It will take a very high polish — and keep it for an exceptionally long time.

The resilience of AZPHLEX is greater than that of any other grease-proof tile that even approaches it in quality. In short, AZPHLEX is the premium-quality, premium-feature asphalt tile — yet it costs only a few cents more a foot than standard asphalt tile!

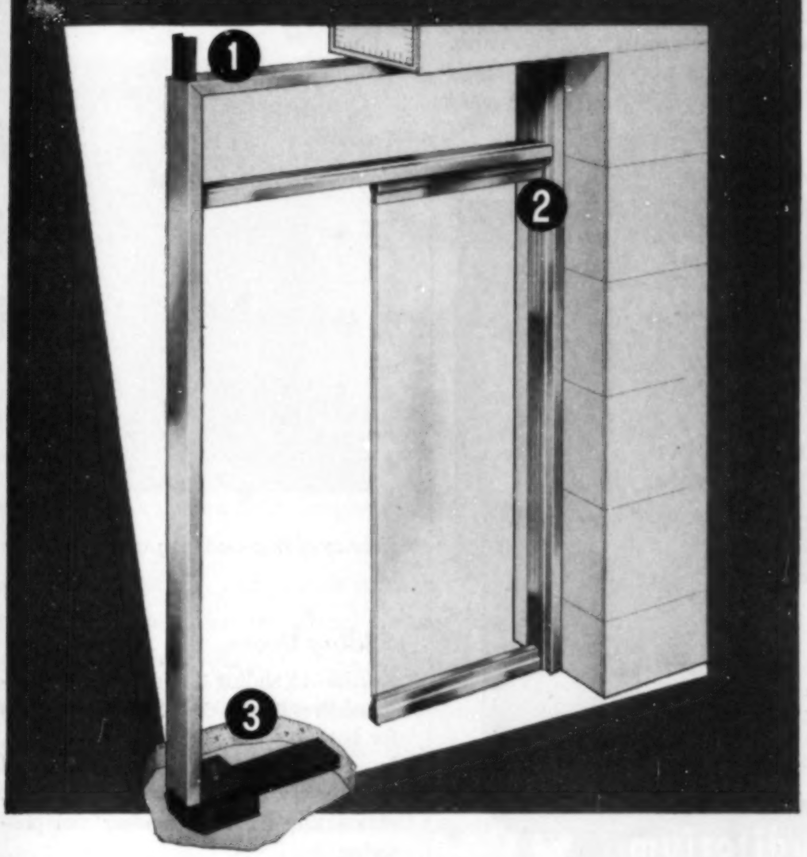
WHERE PLANS CALL FOR THE BEST — SPECIFY AZPHLEX, THE TILE WITH THE QUALITIES YOU ASKED FOR!

For complete information contact your AZROCK-AZPHLEX dealer — consult Sweet's Architectural — or write to Dept. C. Please classify your business as architectural, contractor, owner, etc.

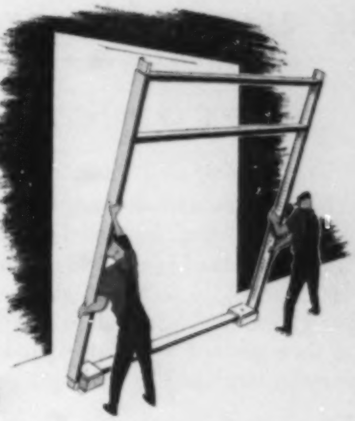
AZROCK ASPHALT TILE
AZPHLEX ASPHALT TILE

UVALDE ROCK ASPHALT CO.
Makers of AZROCK and AZPHLEX Asphalt Tile
FROST BANK BLDG. SAN ANTONIO, TEXAS

NOW...a doorway that has *everything!*



WITH the new Pittsburgh Doorway you don't even need a screw driver; there's no drilling of holes in the frame. And there's nothing to assemble. You just unpack the frame, bolt it into the building opening, and hang the massive Herculite Tempered Plate Glass Doors—for which the frame is especially engineered. Everything is in one "package"—the famous Pittco Checking Floor Hinge, moldings for transom glass, supports for sidelights, strikes for locks, sockets for bolts, *everything!* No time-consuming calculations. No worries about setting and fitting. But this is only a small part of the story. For complete information, why not fill in and return the coupon? There's no obligation.



①

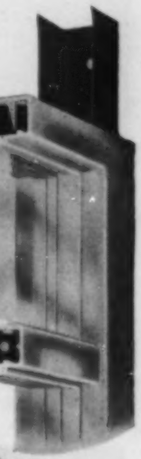
EVERYTHING IN ONE PACKAGE

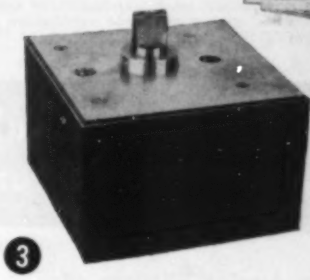
Pittsburgh Doorways reach the job, ready for bolting into the opening. Twelve standard designs are available which, singly or in combination, will fit any job.

②

STURDY, HANDSOME FRAME

Fabricated of extra-heavy extruded aluminum, highly polished and anodized. It's reinforced with steel channel and tie rods, as partially shown here.





③

PITTCO CHECKING FLOOR HINGE

Only 6¼" x 6¼", it is an engineering marvel. Has positive door-speed control, separate checking control, built-in hold-open feature. It's sealed in oil for life.

Pittsburgh Plate Glass Company
2355-9 Grant Building, Pittsburgh 19, Pa.
Without obligation on my part, please send me a FREE copy of your booklet on Pittsburgh Doorways.

Name..

Address..

City.......................State...............

Pittsburgh
DOORWAYS

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

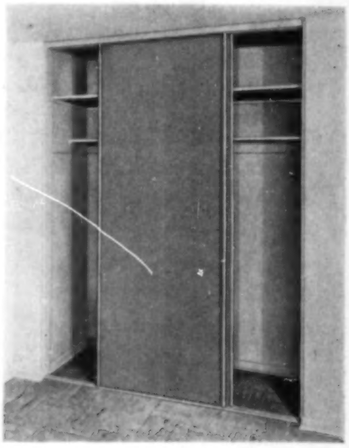
PITTSBURGH PLATE GLASS COMPANY

PRODUCTS

(*Continued from page 174*)

useful as a space-saver and weight-reducer in building construction, the partition consists of ¾-in. steel channel studs, attached to a 2-in. high angle ceiling runner and a metal base with clips, then covered with flat expanded type metal lath and five coats of light-weight aggregate (perlite-gypsum) plaster. Both faces are finished. Total weight is about 5 lb per sq ft.

The thin partition is said to have withstood successfully fire-endurance and hose-stream tests conducted under standards set by the American Society for Testing Materials. Metal Lath Mfgrs. Assoc., 636 Engineers Bldg., Cleveland 14, Ohio.



Floor to ceiling mounting of sliding doors

Sliding Doors

Glide-All sliding doors, made of Tempered Presdwood, edged with steel tubes for both support and use as door pulls, have both upper and lower tracks, and feature floor to ceiling application, eliminating framing, bracing and plastering.

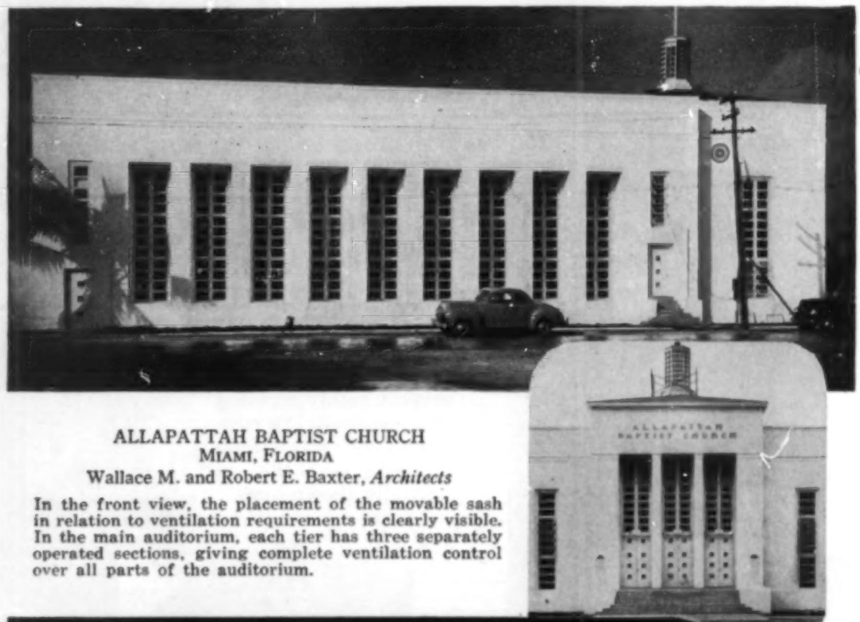
Standard panel sizes are 96 in. high by 24, 30½ or 36½ in. wide. Special sizes to 48 in. wide, and finishes in wood grains, leather effects and cloth textures can be supplied. Extruded aluminum tracks may accommodate up to 10 panels to cover a span of 40 ft.

Installation is in three steps. The top track, with its valence to conceal rollers, and the recessed floor track are screwed in place. Doors are set in by insertion in upper track and pushing up to compress top roller springs, then engaging lower rollers with floor track. Operation is said to be smooth and rattle-free. Wood-All Industries, Inc., 2035 S. Calumet [illegible]e., Chicago 16, Ill.

Combination Sink

The *Automagic* sink combines clothes washer, dishwasher and sink cabinet in one unit, using one mechanism and set of controls to operate both dish and clothes washers. Separate tubs are provided for the dish and clothes washing

(*Continued on page 178*)



ALLAPATTAH BAPTIST CHURCH
MIAMI, FLORIDA
Wallace M. and Robert E. Baxter, *Architects*

In the front view, the placement of the movable sash in relation to ventilation requirements is clearly visible. In the main auditorium, each tier has three separately operated sections, giving complete ventilation control over all parts of the auditorium.

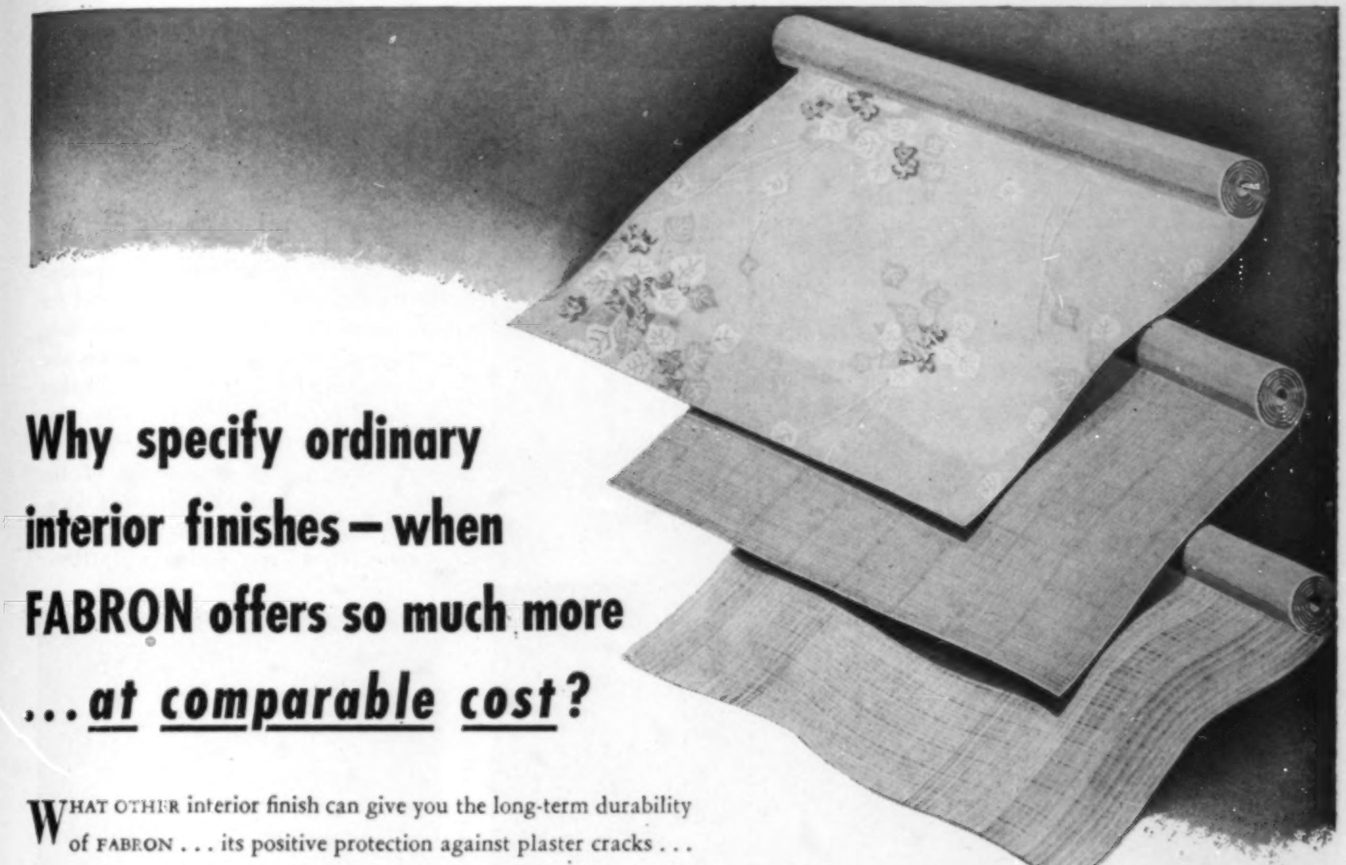
Effective, Economical Auditorium Ventilation by Natural Means . . .

• Gate City Awning Windows offer unmatched flexibility of ventilation by taking advantage of natural forces. On hot days, when ventilation is needed most, they deflect the currents of outdoor air toward the ceiling and keep the air mass moving, with comfort benefits to the audience or congregation. Without noise or other distraction they may be adjusted by a small handle. Even rainy day ventilation is practical. Rigidly constructed of wood, these windows do not flutter or rattle. They cannot be slammed. Movable units may be placed without regard to height above the operator. All hardware, including the thrust arms, is virtually unnoticeable.

In your next auditorium project, substantial economies in ventilating equipment may be possible by specifying Gate City Awning Windows—the windows that put Nature to work. *For further information, see Sweet's or write to Gate City Sash & Door Co., Dept. R-12, Fort Lauderdale, Fla.*

AWNING WINDOWS BY
Gate City

Offices and Factory: Fort Lauderdale, Florida • Export Sales Representative: Frazar & Company, 50 Church Street, New York 7, U.S.A. • Cable Address: Frazar, N. Y. • Agents in principal cities throughout the world.



Why specify ordinary interior finishes—when FABRON offers so much more ...*at comparable cost*?

WHAT OTHER interior finish can give you the long-term durability of FABRON . . . its positive protection against plaster cracks . . . its easy washability . . . its positive protection against fire spread—and still remain within the limited budgets that confront most institutional projects today?

As far as initial cost is concerned, FABRON is available for institutional construction at a cost that need be little—if at all—higher than that of a good quality 3-coat oil paint treatment. Even more important to the client, however, is the proven fact that FABRON outlasts several ordinary redecorations. By eliminating the inconvenience and expense of frequent redecorations, FABRON assures substantial operating economies . . . begins paying for itself the very first time an ordinary finish would require re-doing.

FABRON's superiority has been demonstrated by years of service in more than 1000 hospitals . . . a similar number of hotels . . . countless schools, colleges, apartment houses, etc. Before specifying the interior finish for your next institutional project, be sure you have *all* the facts about FABRON. Mail the coupon today.

FABRON is supplied in roll form and consists of a canvas backing to which have been bonded layers of plastic, topped off by lacquer colors. It is applied as easily as wallpaper. More than 180 patterns and colors permit a decorative latitude unmatched by ordinary interior finishes.

Our Advisory Department will gladly cooperate in estimating costs, establishing color schemes, etc., from blueprints. Cost free, of course.

tested listed
Underwriters' Laboratories, Inc.
National Board of Fire Underwriters

FABRON *prevents fire-spread. Each roll bears the label of the Underwriters' Laboratories, Inc., sponsored by the National Association of Fire Underwriters, Inc.*

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REG. U. S. PAT. OFF.
the canvas-plastic-lacquer wall covering
FREDERIC BLANK & CO., INC.
Established 1913
230 Park Avenue, New York 17, N. Y.
Represented in Canada by
The Robert Simpson Company Limited—Special Contract Division

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FREDERIC BLANK & CO., INC., 230 Park Avenue, New York
Please send us samples of Fabron and information concerning its use in:

☐ Hospitals ☐ Hotels ☐ Schools ☐ Theatres
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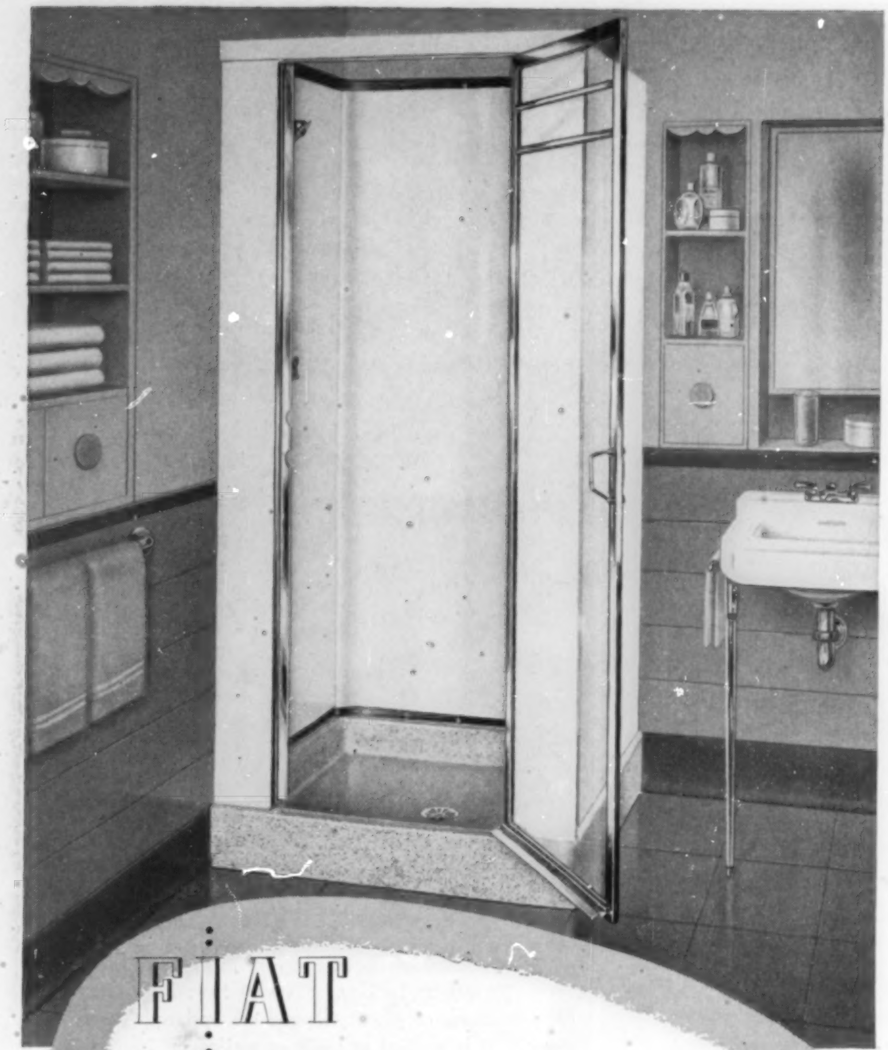


FIAT

Admiral . . . THE ONLY SHOWER CABINET WITH A VITREOUS PORCELAIN ENAMEL INTERIOR

The smooth, glass hard, vitreous porcelain interior surfaces of the Admiral Shower provide the ultimate in cleanliness and sanitation, they remain white and impervious to wear for a lifetime. Exterior of side and back panels are regularly finished with vitreous porcelain enamel ground coat, but can be furnished to match interior at small extra cost. Front stiles and head rail, bonderized, galvanized steel finished in white synthetic baked-on enamel. Receptor, deep type terrazzo made of black and white marble chips and white cement. Sizes 36" x 36" x 80" and 40" x 40" x 80". Illustration shows this shower equipped with a Fiat Dolphin heavily chromium plated glass door. The Admiral shower is suitable for high grade residential and institution installations.

Complete specifications in Sweets' Architectural Catalog File, or write any of the three Fiat plants for catalog.

FIAT

FIAT METAL MANUFACTURING CO.

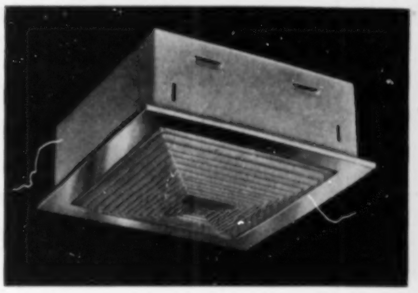
Three complete plants

Chicago 13, Ill. Long Island City 1, N. Y. Los Angeles 33, Calif.

In Canada—Fiat showers are made by Porcelain and Metal Products, Ltd. Orillia, Ontario

(Continued from page 176)

operations. A swinging arm is provided in the cabinet below the sink bowl for storage of the tub not in use. The dishwasher is said to handle china, glass and silver service for six persons. The clothes washer has an 8-lb load capacity. One faucet swings to serve either washer or sink. The overall dimensions of the enameled steel cabinet are: 60 in. long, 27 in. wide and 36 in. from floor to work surface. Thor Corp., Chicago 50, Ill.



Lighting fixture features shallow depth

Recessed Lighting Fixtures

A moderate-priced line of recessed incandescent lighting fixtures features shallow depth and has round and square models in seven sizes and a variety of styles. Round units, of heavy-gauge one-piece aluminum, are 5 in. deep, while the squares, of heavy-gauge steel, range in depth from 4 to 5½ in. The units are said to be thoroughly vented to assure cool operation, and are available with aurora prismatic lens, Corning pyrex-fresnel lens, semi-flush dropped lens, concentric louver, or combination of eggcrate louver with glass. Finishes include chrome, white enamel, satin brass, satin copper and satin bronze. Litecraft Mfg. Co., 104 S. Fourth St., Brooklyn 11, N. Y.

Explosion-Proof Sump Pump

The fully enclosed motor and switch of the *Series MC Penherthy* automatic sump pump are said to have Underwriters' approval for such hazardous locations as atmospheres containing dust, explosive vapors and gases.

The copper and bronze pump has a nominal capacity of 4000 gph, and is

(Continued on page 180)

FOR LONG ROOF LIFE

Shenandoah Life Insurance Company uses

COPPER and Common Sense!

On the new home office building (right) for the Shenandoah Life Insurance Co., Inc., Roanoke, Va., this specially designed cupola (left) and the hipped roof are covered with over 40,000 lbs. of copper for lasting protection. Gutters, coping, facia and inside drains are also constructed of copper. Architects and Engineers: Smithey & Boynton; General Contractor: B. F. Parrott & Co., Inc.; Sheet Metal Contractor: Valley Roofing Corp.

Monumentally situated on a high knoll in Roanoke, Virginia, the new home office building for the Shenandoah Life Insurance Co., Inc. is an inspiring combination of functional design and architectural beauty.

This building's all-copper roof and cupola have made history in Virginia's construction field. Gutters, coping, facia and inside drains are also all of copper—and all constructed in accordance with the scientific principles of sheet copper construction developed in the Revere Research Laboratories.

You will find complete information about these new principles in Revere's 96-page manual entitled *Copper and Common Sense.* This book is filled with data that enable you to design or install roofs, gutters, flashing, etc. *that give extra years of service.* By making full use of these data you can always be sure of fine and durable sheet metal construction based on sound engineering principles.

This book has been widely distributed to architects and sheet metal contractors, and probably is in your office files. Be sure to refer to it; and if you do not have a copy, write for one now on your office letterhead.

Revere products—including Sheet and Roll Copper, Lead-coated Copper, Thru-Wall Flashing, Reglet and Reglet Insert Flashing, Vertical Rib Siding, Copper Water Tube, Red Brass Pipe, etc.—are handled by leading distributors throughout the country. A Revere Technical Advisor will always be glad to consult with you without obligation.

REVERE

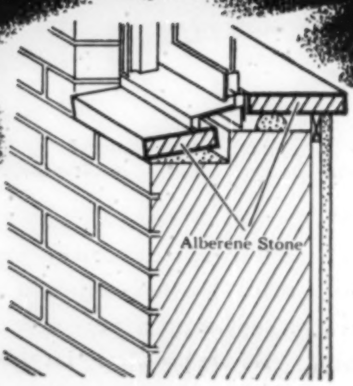
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.
Sales Offices in Principal Cities, Distributors Everywhere.

window sills
and stools
by
ALBERENE



- They never chip, scale, or split.
- They're blue-gray — harmonize with any color.
- They're free of maintenance costs — for all time.

Alberene stone may also be used on copings, spandrels, exterior and interior trim. Write today for complete data and samples to —

ALBERENE STONE CORP.
419—4TH AVENUE • NEW YORK 18, N. Y.

(*Continued from page 178*)

said to operate against a 23 ft discharge head. Motor leads are connected to switch terminals through threaded conduit. The switch is controlled by a copper float, sliding on the supporting column, with an adjustable stop to govern the water level at which the pump starts and stops. The pump is built in lengths for sump depths of 2, 3, 4, 6 and 8 ft. All lengths are available for 110 or 220 v, 60 cycle current. Penherthy Injector Co., 1242 Halden Ave., Detroit 2, Mich.

Push button operates electric window

Automatic Windows

T-Window is a double glazed window assembly developed to open or close electrically, stopping at any desired level. Metal screening comes into place automatically as the window opens. Power is furnished by a concealed, overhead ¼ hp electric motor. The assembly is encased in a metal frame containing vertical tracks along which stainless steel channels of the window unit slide. The unit is lowered into a well between walls or below grade when floor to ceiling windows are used. Vita Automatic Window Co., Smithtown Branch, Long Island, N. Y.

Insulating Roof Coating

Described by the manufacturer as a "metal roof that spreads on," a roof surfacing material called *Asbesto Fiberated Lumidad* is claimed to provide a water-tight reflective and insulating surface that will not crack or check. The product is a thick liquid consisting

(*Continued on page 182*)

G-E Q-Floor Wiring used in modern Cleveland Bank

When the Central National Bank of Cleveland opened its fourteenth branch office at 509 Euclid Avenue, it provided Cleveland with the most modern building and the finest banking facilities possible.

Complementing its modern design, this new structure has an electrical raceway system designed to maintain its modernity — Robertson Q-Floors with General Electric Q-Floor Wiring.

This General Electric Q-Floor Wiring installation is well-equipped to handle all immediate needs for electrical and signal service. In addition, provisions for future requirements are literally built into the permanent raceway system.

By means of simple fittings, the steel cells of the entire Q-Floor become part of the electrical and signal distribution systems. Since the cells are on six-inch centers, outlets can be installed every six inches in the floor.

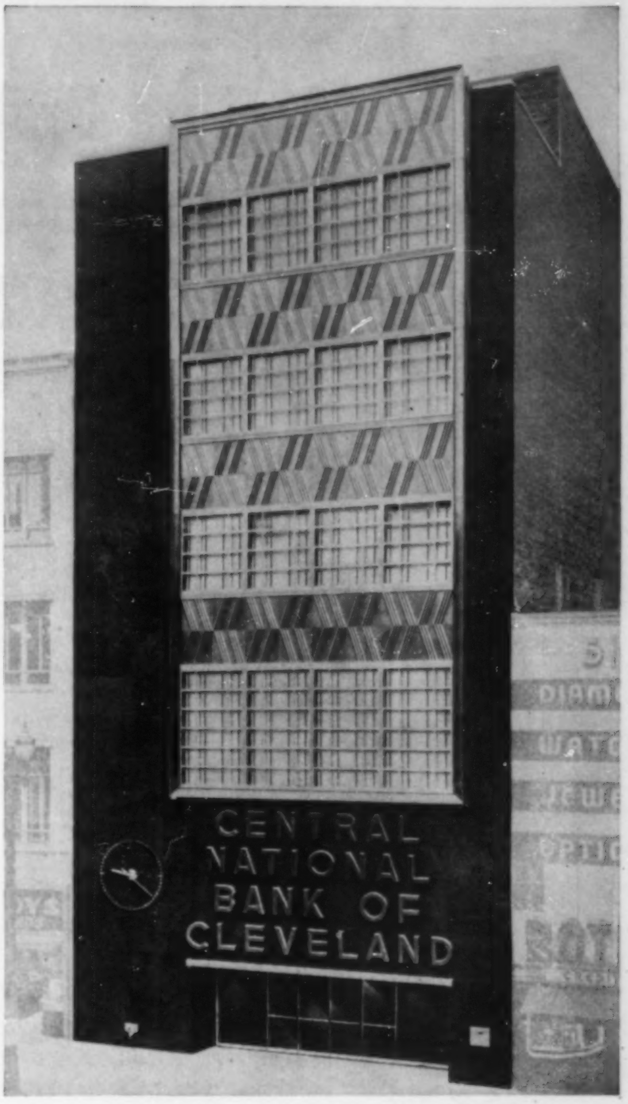
Q-Floors suitable for any size, any type, of building

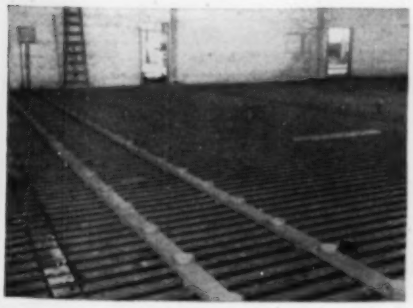
While Q-Floors are extremely suitable for monumental structures, any building—commercial, industrial, or institutional—can be designed to stay electrically adaptable with Q-Floor and G-E Q-Floor Wiring. In fact, there is almost no type of building where Q-Floor Wiring cannot be successfully employed.

Get complete details on G-E Q-Floor Wiring

The General Electric Q-Floor Wiring story is presented in a 106-page book, "Q-Floor Wiring Data Manual." This comprehensive catalog contains descriptions, wiring diagrams, installation details, and other valuable information on this highly-flexible distribution system for architects, builders, and electrical contractors. If you would like a free copy, write to Section C16-125, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

Q-Floor is manufactured only by the H. H. Robertson Company, Pittsburgh, Pa. Samples can be seen at any General Electric Construction Materials or Robertson district office.





Q-Floor with electrical headers in place. To install an outlet anywhere in the floor, it is only necessary to tap through the floor surface to the Q-Floor cell, pull wires through, and install outlet.

View of a typical General Electric Q-Floor Wiring installation in an office, showing handy signal and electrical outlets before furniture is arranged.

Architect:	Conrad, Hays, Simpson, & Ruth
Electrical Engineer:	Clyde H. Loughridge
Electrical Contractor:	Martien Electric Company
General Contractor:	The Hunkin-Conkey Construction Company
Manager of Building Department, Central National Bank of Cleveland:	J. R. Behan

Q-Floor Wiring

FOR ELECTRICAL FLEXIBILITY

GENERAL ELECTRIC

WOLMANIZED
Reg. U. S. Pat. Off.
PRESSURE TREATED LUMBER

Means Absolute Protection to Wood Endangered by ROT and TERMITES

Water Tanks | Sills and Joists | Cooling Towers | Roof Decks
Humidified Buildings | Foundations | Floors | Other Moisture "Traps"

Here are six common conditions where WOLMANIZED Pressure-Treated Lumber provides protection from decay and termites:

1. Where excessive ground moisture, rain or thaws cause early decay failures.
2. Where wood near the ground is open to termite attacks.
3. Where wood is in contact with damp concrete or masonry.
4. Where steam and vapor from industrial processes promote wood decay.
5. Where walls, floors, ceilings are subject to condensation from refrigeration.
6. Where wood is exposed to moisture in artificially humidified buildings.

Investigations by qualified technologists prove that on installations where decay and termites ordinarily shorten lumber life, WOLMANIZED Pressure-Treated Lumber lasts *Three to Five Times Longer* than untreated wood.

Such lasting protection is assured because penetrating, preservative solutions are forced, by vacuum-pressure treatment, deeply into the wood fibers of WOLMANIZED Lumber. And, WOLMANIZED Lumber is clean, odorless, paintable, non-corrosive, non-leaching and glueable. Only WOLMANIZED Lumber offers *all* these extra advantages.

FIND OUT HOW WOLMANIZED LUMBER GIVES YOUR CLIENTS EXTRA VALUE

This informative booklet tells you all the facts about WOLMANIZED Lumber, and how it saves time and money for your clients. Be sure to have a copy—write for yours today.

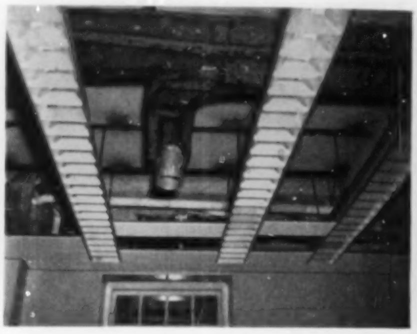
AMERICAN LUMBER & TREATING COMPANY

General Offices: 332 South Michigan Avenue, Chicago 4, Illinois
Branch Offices: Baltimore, Boston, Jacksonville, Fla., Los Angeles, New York, Philadelphia Portland, Ore., San Francisco, Washington, D. C.

PRODUCTS

(*Continued from page 180*)

of aluminum flakes bound to asbestos fibers by a special waterproofing base. The material remains aluminum-colored all through for reflective insulation on both surfaces. Coverage is said to be from 100 to 200 sq ft per gal depending upon roughness or porosity of the roof. It may be applied by brush or power spray equipment. Asbestos Mfg. Corp., Wabash and Second St., Michigan City, Ind.



Above: lighting troffers support acoustic ceiling. Below: completed installation

Troffer Lighting

Approximately 13,000 ft of *Miller Fluorescent Troffers* were used for the flush continuous strip lighting in the new Providence Washington Insurance Co. Building, Providence, R. I. The troffers, combining aluminum reflectors with baffles on 6 in. centers, are on irregular spacing, alternating on 3 and 4 ft centers. Using 200 ma 4500° slimline lamps, the units give 50 foot-candles of illumination, with low brightness at the source, and provide a cutoff of 47½° from horizontal. In this installation the units are hung from adjustable clamp

(*Continued on page 184*)

Have you made it SAFE for them IN school as well as out...

by specifying NORTON non-slip STAIRS and FLOORS?

. . . For positive, permanent non-slip protection plus exceptional wear-resistance, thoughtful architects are cooperating with practical-minded school boards in specifying Norton non-slip stairs and floors where slipping hazards and resistance to heavy foot traffic are both important. Many falls occur on stairs, but slipping accidents frequently occur on many walking surfaces when they become wet. Norton stairs and floors provide permanent non-slip protection, even when wet, and extreme resistance to heavy foot traffic. They are non-resonant and comfortable under foot. A wide selection of colors is available.

Small and large schools across the country have combined safety, economy and attractiveness by taking advantage of the non-slip qualities of long-wearing Norton stairs and floors. **See our catalog in Sweet's, or write for free catalog No. 1935.**

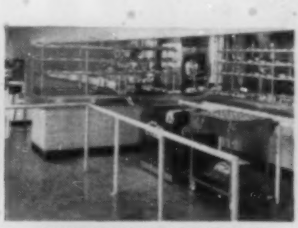
4 CHOICES—ALL NON-SLIP AND WEAR-RESISTANT !

TERRAZZO AGGREGATE

Specially prepared for monolithic or precast terrazzo. Applications: lobbies, foyers, corridors, auditoriums and as precast treads for stairways.

STAIR AND FLOOR TILE

Available in nine colors and eight sizes for stairs, walkways and ramps; recommended as step nosing for marble, tile, terrazzo, concrete, or steel stairs.



CEMENT FLOOR AGGREGATE

Incorporated in cement or asphalt floor in proper proportion, it reinforces the cement and increases durability several times. Used in cafeterias and washrooms.

CERAMIC MOSAIC TILE

Provides non-slip protection for attractive mosaic floors around swimming pools, in shower and washrooms, and around the counters in cafeterias.

NORTON COMPANY NORTON **WORCESTER 6, MASS.**

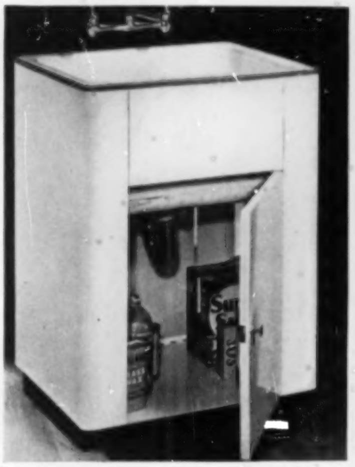
PRODUCTS

(*Continued from page 182*)

hangers and rods attached by angle irons to the ceiling. The angle irons also support ducts. Reflectors, set in troffer channels, have aligner straps at junction and ends to hold them rigidly in place. The aluminum baffles are said to be easily removable for cleaning and relamping. Lips on the troffers support acoustical ceilings on "L" and "T" splines. The Miller Co., Meriden, Conn.

Cabinet for Laundry Trays

Affording a storage space of approximately 20 by 24 by 17 in., the *Trinity* laundry tray cabinet is designed to fit all standard sizes of laundry trays or tubs. The cabinet accommodates cleaning materials and serves as a tray mounting. Finish is of white baked enamel with a 3 in. black kick base and chrome knob on the door. Door hinges are constructed to open either left or right. The unit is 34 in. high and weighs 48 lb. Size of laundry tray being used must be specified, as the cabinet is not interchangeable. Kiener Machine Products Co., 1831 N. Main St., Los Angeles 31, Calif.



Metal laundry cabinet adds storage space

Copper Flashing

Four new products which comprise a system of solid copper flashing for masonry construction are claimed to provide easier and more economical installation. *Revere-Keystone Thru Wall Flashing* in 10 or 16 oz copper sheets in standard lengths, any width required, has sawtooth ribs said to provide a positive mechanical bond in every direction in the mortar bed, assuring protection against seepage and leaks at copings, parapets, spandrel facings, etc. No soldering is required at end joints.

Revere Simplex Reglet is designed to provide a watertight connection between concrete and copper flashing. The 16 oz copper reglets, furnished in 61 in. long strips, are attached to concrete with special nails driven through pre-punched holes. *Revere Simplex Insert Flashing*, of

(*Continued on page 186*)

We built the church with WOOD AND GLUE

AN ARCHITECT TELLS HOW RILCO HELPED HIM.

1. The building committee wanted a big church . . . the rector held out for traditional beauty and a high, vaulted ceiling . . . the finance committee said, "Keep the cost down". When they threw the problem in our laps we thought right away of wood . . . and, naturally, of Rilco.

2. We sent our preliminary plans to Rilco . . . and in a few days, back came complete engineering data showing how Rilco Glued Laminated Arches would simplify our job. There was everything we needed . . . the rector's vaulted ceiling . . . the committee's large building . . . all at the right price!

3. The Rilco Arches were delivered to the job all ready to put up. Each one was cut to fit perfectly . . . all drilling had been done . . . all the connectors were furnished . . . every arch plainly marked. The contractor's regular carpentry crew couldn't go wrong. No labor cost wasted on this job!

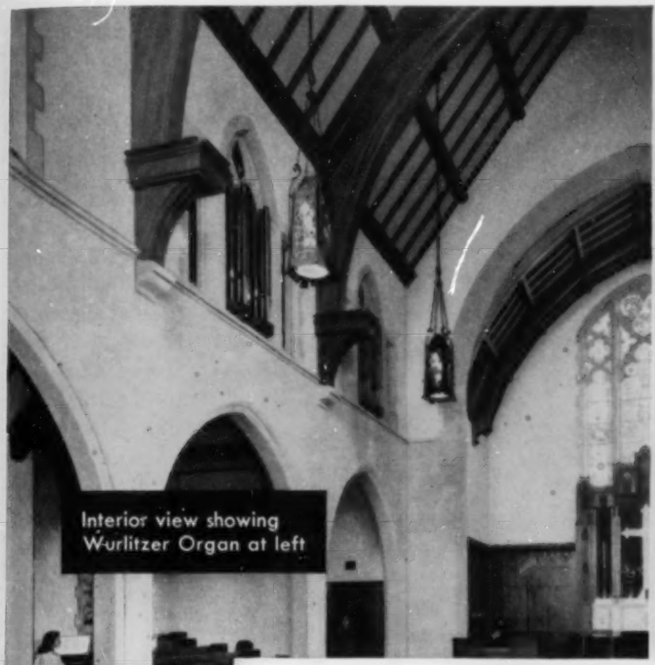
4. Everyone in the congregation says it's the handsomest church in town. And those beautifully grained Rilco Arches are inspiring as you look toward the pulpit. We're certainly glad to find out Rilco makes rafters, trusses, and arches for many other types of buildings, too. We plan to use them more and more. Maybe you should, too.

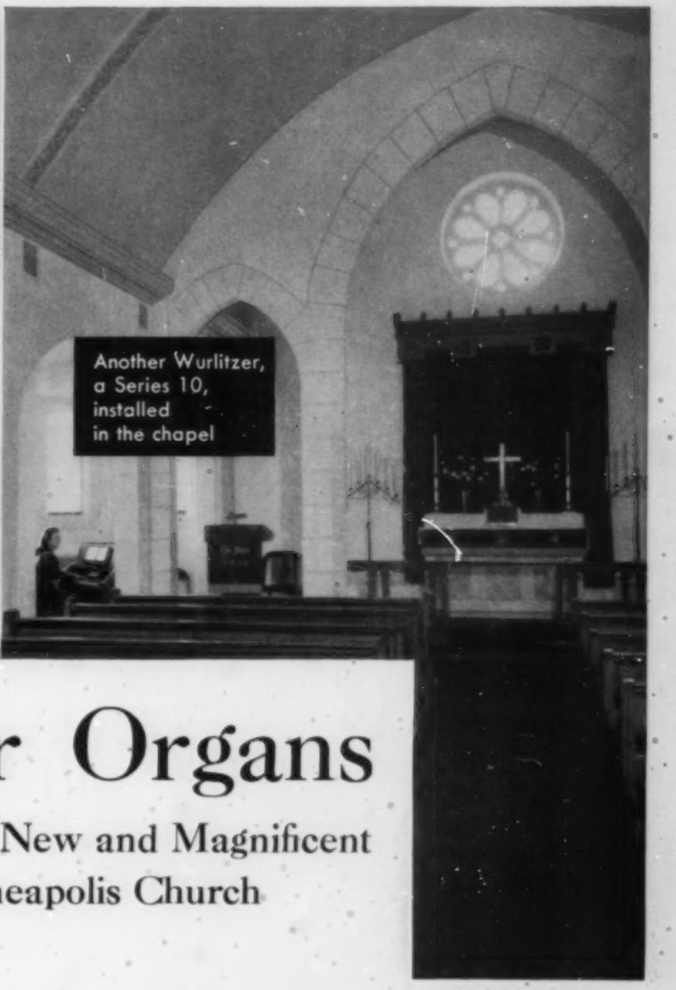
RILCO

WORKS WONDERS WITH WOOD

Laminated PRODUCTS, INC.

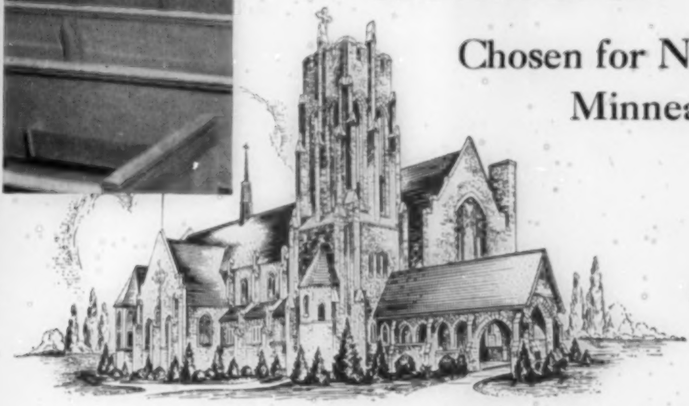
1670 First National Bank Bldg.
ST. PAUL, MINNESOTA





Wurlitzer Organs

Chosen for New and Magnificent Minneapolis Church



Mt. Olivet Lutheran Church, Minneapolis, Minnesota

Even though the original design of this beautiful new church included provisions for a large and costly pipe organ, Wurlitzer Electronic Organs were selected for the final installation. This was because it was found that traditionally correct organ music for the church proper, seating 1400 people, could be more than adequately provided by a two-manual Series 21 Wurlitzer Organ—*at great savings in cost.*

In addition, a single-manual Wurlitzer Series 10 was placed in the lovely chapel of the church. *And the combined costs of both Wurlitzers fell far below the estimates for the installation originally planned.*

To churches, schools and institutions, and to their architects and builders as well, Wurlitzer offers these specific advantages: 1. Two different two-manual organs, and two different single-manual organs, specifically designed to meet the needs of *every* congregation, large or small. 2. Traditional organ tone—rich, full and true. 3. Important savings in space and construction costs. 4. Simplification of plans—simplicity of installation.

In any plans calling for organ installation, our own skilled technicians will be glad to work with you. May we send you complete information?

The Wurlitzer Organ, Series 21. The same model installed in new Mt. Olivet Lutheran Church.

WURLITZER
WORLD'S LARGEST BUILDER OF ORGANS AND PIANOS
UNDER ONE NAME

THE RUDOLPH WURLITZER COMPANY, ORGAN DIVISION, NORTH TONAWANDA, NEW YORK

PRODUCTS

(*Continued from page 184*)

10 oz copper, has ⅛-in.-high undercut sawtooth ribs, flattened for insertion in the reglet slot. End joints have a 2-in. interlocking feature.

Completing the system is *Revere Keystone Vertical Rib Siding* for weatherproofing parapet walls, penthouses, etc. Ribs stiffen the material considerably, allowing the use of lighter gauge copper. Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.

Stone Preserver

Fluid Stone Curex is reported to prevent deterioration or aging in concrete, stucco, stone, masonry, cinder and cement block surfaces. The liquid, on application, forms silicates on the surface. Organic ingredients are omitted from Curex which is said to afford protection against fungi, bacteria, atmospheric corrosion, fumes and other factors contributing to ordinary deterioration; and to be acid and water repellent, and to bind loose particles. No water is used for mixing. Curex comes in nine colors and clear transparent, which dry to a flat finish. Pavinoleum, Inc., 342 Madison Ave., New York 17, N. Y.

Magnetic Catch

Designed to provide a non-sticking, easily worked cabinet door catch, *Magnecatch* employs a lifetime Alnico magnet, working on a phosphor bronze spring, all mounted in a 2 in. rustproof housing. The cabinet is held closed when the magnet contacts a small disk mounted on the door. Three screws hold the catch in place. It is claimed to be adjustable to warpage and trouble-free. Engineering Achievements, Inc., 1231 Tchoupitoulas St., New Orleans 13, La.

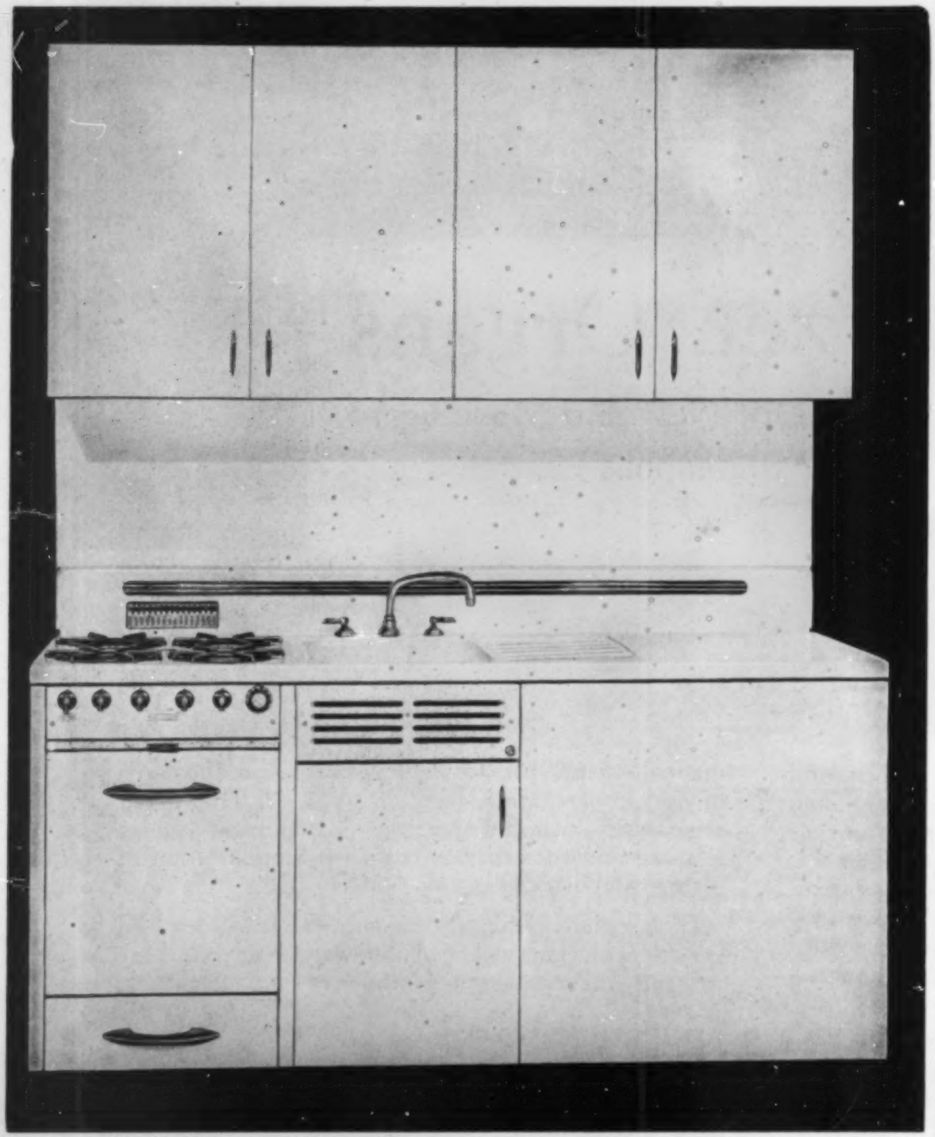
Selector Switch

A combination selector and control switch is announced, which enables the user to select any one of nine different electrical circuits and operate them separately or, with one sweep, turn on or off all nine circuits. The master switch, *GE3652*, is of the rotating type for the 24-v remote control wiring systems, and is mounted together with a separate single "on" and "off" switch. The manufacturer expects it to be applied in residential and industrial installations and in such places as motor courts, parking lots, bowling alleys, etc. General Electric Co., Construction Materials Dept., Bridgeport, Conn.

Factory Finished Plywood

Intended particularly for erection over existing walls, *Plankweld*, a factory finished plywood, ¼ in. thick, 16¼ in. wide by 8 ft long, is grooved at each long edge for easy installation with metal clips, along with nailing. The groove of each panel is slipped into that

(*Continued on page 188*)



6 cubic foot (net) refrigerator on the

MURPHY - CABRANETTE KITCHEN - Series 69

Here is a complete family-size kitchen . . . streamlined into compact assembly only 69 inches wide. Modern range (gas or electric) with full-size oven and broiler, a 6 cu. ft. (net) refrigerator with stainless steel frozen food locker, a one-piece sink-and-range top, storage space. Entire front is genuine vitreous porcelain . . . permanent beauty that cleanses with soap and water, retains its gleaming whiteness forever. Minimum maintenance cost is proven in more than 25 years of service in rental properties. Write for complete bulletin.

DWYER PRODUCTS CORPORATION
Dept. R12 — MICHIGAN CITY, INDIANA

Famous Pentagon gets *replacement* gutters...

FOR PERMANENT PROTECTION, *the old gutters have been replaced with gutters made of strong, corrosion-resistant and economical Monel Roofing Sheet. Here a worker solders a riveted seam in the gutter lining.*

INSTALLING A RIVETED AND SOLDERED *section of Monel Roofing Sheet in the built-in gutter of the Pentagon's outer perimeter. Fabricator, Rupertus Sheet Metal Works, Washington, D. C., reports: "Some of the gutters were 55 inches in girth, but Monel was easy to fabricate and install."*

* * *

...and this time they're MONEL!

There were two reasons why it was decided to put new gutters on the Pentagon Building.

Repairs to the existing gutters would have been costly. And – more important – repairs would have provided only temporary relief.

Replacement was the only *permanent* solution.

So replacement it was. And this time the gutters were fabricated of Monel* Roofing Sheet.

Advantages of Monel

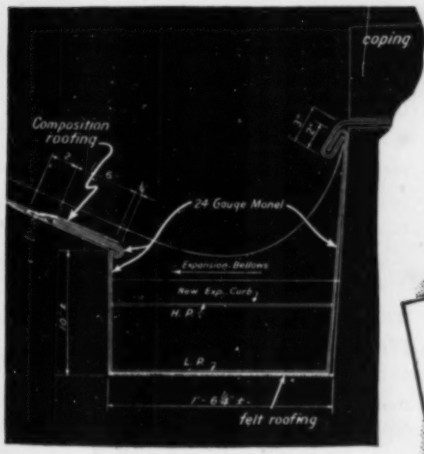
With its low expansion rate, its high strength and toughness, its resistance to fatigue and corrosion, Monel Roofing Sheet assures "life-of-the-building" protection for the Pentagon. The new gutters are safe from damage by heat, cold, rain, snow, ice and airborne corrosives.

Cost-wise, too, there were advantages in using easy-to-form Monel Roofing Sheet on the Pentagon Building. Because of this nickel-copper alloy's greater strength and rigidity, it was possible to use a lighter-gauge sheet for the gutters.

Get NEW architects' bulletin

Other benefits, too, go hand in hand with the use of Monel Roofing Sheet. You'll find them covered in our brand new bulletin, *Basic Application Data – Monel Roofing Sheet.*

This new publication lists suggested gauges of Monel Roofing Sheet for principal building applications, reviews its characteristics, and tells about its relative cost and availability. Installation procedures are discussed and a sample specification wording provided. Send for your copy – ***now.*** *Reg.U.S.Pat.Off.



DETAIL OF SECTION *of built-in gutter showing how Monel Roofing Sheet was used.*

THE INTERNATIONAL NICKEL COMPANY, INC. *67 Wall Street, New York 5, N.Y.*

MONEL...FOR THE LIFE OF YOUR BUILDING

Mail Coupon for this Free Bulletin
Basic Application Data

Architectural Section
The International Nickel Company, Inc.
67 Wall Street, New York 5, N. Y.

I'd like to know more about durable, economical Monel Roofing Sheet. Please send me without obligation your new folder, *Basic Application Data – Monel Roofing Sheet.*

NAME..........

COMPANY..........

STREET..........

CITY.......... ZONE.......... STATE..........

AR-12-49

Are you ignoring the "WEARING PARTS" . . . when you design a building?

Don't forget floors when you design for permanence. They receive more wear and more abuse than any other part of a building. When floors become worn the whole building looks shabby.

More and more leading architects are specifying WRIGHT RUBBER TILE for every flooring requirement because they have found how well WRIGHT RUBBER TILE resists wear.

No other floor covering offers the same combination of beauty and proved long life . . . or combines comfort and ease of cleaning as effectively as WRIGHT RUBBER TILE.

And no other rubber floor covering is made in two different types. There is *Wrightex* soft rubber tile for most installations and *Wrightflor,* a special hard surface rubber tile for extremely heavy traffic service.

Don't ignore the "wearing parts" of the building you design. Write for the facts and you will be specifying WRIGHT RUBBER TILE. Wright Manufacturing Company, 5205 Post Oak Road, Houston 5, Texas.

NOW — Get complete color harmony!

Wright-On-Top Compression Cove Base is now made in *all* field tile colors — permitting complete color harmony in every installation.

WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

PRODUCTS

(*Continued from page 186*)

of the adjoining one. Face-nailing is unnecessary. Plankweld is made in birch and oak, but will eventually be produced in other woods. It is packaged in bundles of ten pieces, with clips and instructions. United States Plywood Corp., 55 W. 44th St., New York 18, N. Y.

Compact Utility Furnace

The Majestic Automatic forced air utility furnaces *Model VF-26,* requires floor space only 26 in. square, and features a drawer type burner assembly that permits installation of either oil or gas burner, or a later change of assembly. The unit is factory assembled, ready to attach fuel line, thermostat and power line. Installation is said to be simple and inexpensive.

The furnace has a bonnet rating of 100,000 Btu and is adaptable to either up- or down-flow systems. Other features include channeled air-circulating type of casing, suspended type blower, large combustion chamber, over sized secondary heat transfer unit, cold air return available at either side or bottom, and flue connection on the front to allow placement of the unit in a corner. The Majestic Co., Huntington, Ind.

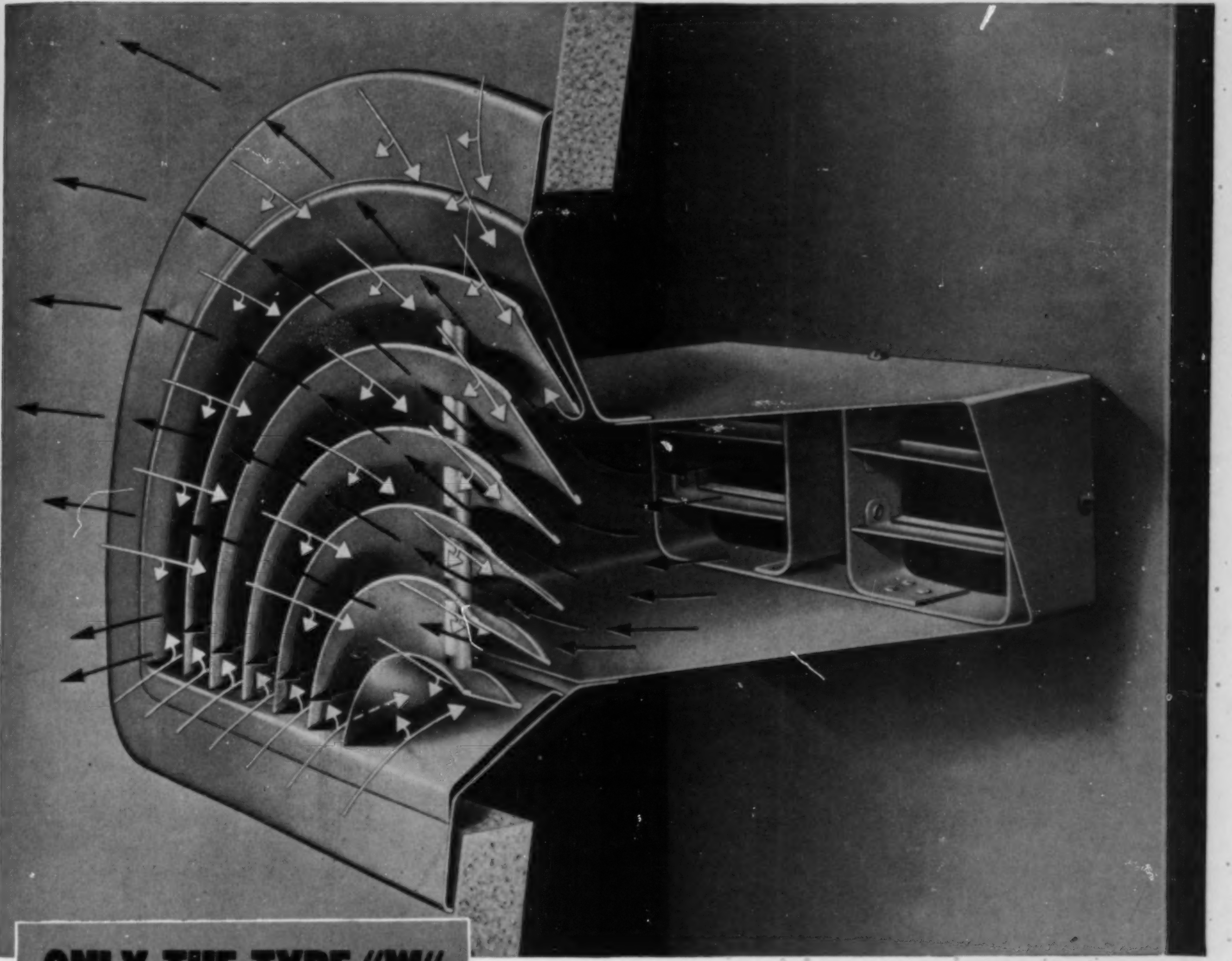
Code Numbered Wire

Designed for multiple-wire electric controls, *Magic Wire* uses numbers instead of colors for identification. The main advantage cited is the limitless combination of numbers possible. Each wire has its code number imprinted in red at one-inch intervals on yellow insulation. With terminals numbered to correspond with the wires, ease and accuracy of installation and servicing is said to be greatly increased. The wire numerals are claimed not to wash or wear off, nor become discolored with age. Magic Wire is available in No. 16 solid wire with plastic insulation. Other sizes, types and specified brands of wire are available on request. Midwest Automatic Control Co., 510 Third St., Des Moines 9, Iowa.

Scale Models for Planning

Designed to save time in visualizing and developing layouts, a line of ¼-in.

(*Continued on page 190*)

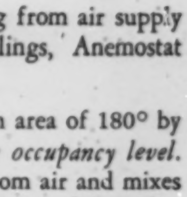


ONLY THE TYPE "W"
ANEMOSTAT
Air Diffuser
PROVIDES
Draftless Air Diffusion
FROM WALL OUTLETS

To solve the air distribution problems resulting from air supply outlets located *on the walls*, instead of ceilings, Anemostat developed the Type "W" Wall Air Diffuser.

The Type "W" effectively diffuses air within an area of 180° by distributing it upward and outward *above the occupancy level.* Because the Type "W" aspirates or draws in room air and mixes it with supply air within the device, temperature and humidity are promptly equalized.

Furthermore, by reducing velocity through expansion, the Type "W" Anemostat handles any specified number of air changes without noticeable air motion. It projects a blanket of mixed air that gently spreads in a draftless pattern and assures true comfort in every part of the room.



For the full story on the Anemostat Type "W" Wall Air Diffuser write for Bulletin 27. The Anemostat Engineering Department or representative is always ready to assist you.

AC-1202

Anemostat Type "W" Wall Air Diffusers are available from stock for immediate delivery in sizes to handle all air requirements.

ANEMOSTAT
REG. U. S. PAT. OFF.

DRAFTLESS *Aspirating* AIR DIFFUSERS

ANEMOSTAT CORPORATION OF AMERICA
10 EAST 39th STREET, NEW YORK 16, N. Y.
REPRESENTATIVES IN PRINCIPAL CITIES

"No air conditioning system is better than its air distribution"

Grand Rapids' magnificent new store takes pride in its significant details of Seaporcel*

Practical beauty *where it counts* is Seaporcel's contribution to this impressive temple of business, designed by Mr. George L. Ely, of Allied Stores, Boston.

For the distinctive sign facia and the modern-as-tomorrow louvres on both sides of the structure, the choice was Seaporcel Architectural Porcelain Enamel, unsurpassed for beauty of appearance - low installation and maintenance cost - permanence - resistance to weather - and the integrity of its manufacturer.

Architects: Perry, Shaw & Hepburn, Boston
General Contractors: Owen-Ames-Kimball, Grand Rapids

ER PONTIAC
SERVICE

A new "Fact Sheet" is just off the press, giving in isometric detail specifications and construction of these ventilation and air conditioning louvres. A copy is yours for the asking.

seaporcel metals inc.

28-02 Borden Avenue, Long Island City 1, N.Y.
STillwell 6-4900

See our catalog in SWEET'S 6d/3

For More Information — Use This Form

Member, Porcelain Enamel Institute

*Reg. U.S. Pat. Off.

SEAPORCEL METALS INC. 28-02 Borden Avenue, Long Island City 1, N.Y.
Please send me Fact Sheet on Ventilation Louvres ____
Send me General Catalogue and other information ____
NAME ____
COMPANY ____
ADDRESS ____ CITY ____ STATE ____

PRODUCTS

(*Continued from page 188*)

to the ft office equipment has been added by Triometric, Inc., to their previous line of scale models and figurines.

With existing or proposed floor plans, ruled to ¼-in. squares, the realistic and detailed models could be used to demonstrate, discuss or sell layout ideas. New models available include desks, cabinets, safes, adding machines, drinking fountains, files, lockers, bookcases, chairs and tables. Figurines of male and female personnel may be obtained in sitting or standing positions. Custom models are also produced on special order. Triometric, Inc., 711 Penn. Ave., Pittsburgh 22, Pa.

Unit Heater

The Grinnell *Thermolier*, designed for vertical delivery of heated air from 9 to 25 ft above the floor, is offered in six models, ranging from 50,800 to 257,000 Btu per hour heating capacities, on the standard basis of 2 lb steam and 60 F entering air temperature. The unit is housed in heavy gauge sheet steel, and has three-point suspension from swivel couplings, which are adjustable for alignment. Supply and return pipe connections are on one side for compactness. Fins are widely spaced to minimize dirt collection. Electric motor and fan are of special design. Grinnell Co., Inc., 277 W. Exchange St., Providence 1, R. I.

Corner Lath

Ex-trand, an improved type of corner lath, is said to be easier and safer to use than the conventional cut-up type. It is formed with smooth edges for safety and speed in application, and has an extra strand at the corner for greater strength. Ex-trand is available in 2 by 2 in. and 3 by 3 in. sizes in 96 in. lengths. It is packed in bundles of 600 ft, protected for shipment and storage. Wheeling Corrugating Co., Wheeling, W. Va.

Baseboard Heating

National Art Baseboard, designed as a heat distribution unit for forced hot water heating systems, employs a heating element made of ¾-in. copper tubing on which is bonded a series of helical copper fins. The unit is encased in steel back and front panel assemblies. Each of

(*Continued on page 192*)

An 80 foot clear span

with light, tremendously strong Truscon Clerespan Steel Joists

An 80-foot Truscon Clerespan Steel Joist (inverted for convenience in handling) being moved into position on the new Star Market building in Newtonville, Massachusetts.

Next time you're working on a job that involves big areas of open floor space remember Truscon Clerespan Steel Joists—the joists that can stretch 80 feet without "over-reaching" themselves!

A recent application of these remarkably rugged joists was made at Newtonville, Massachusetts. The Star Market Company needed a large, pillar-free area for its sales floor; Architects H. L. Feer & William E. Nast, together with engineer, Mark Linenthal, came up with the simple solution—Truscon Clerespan Steel Joists.

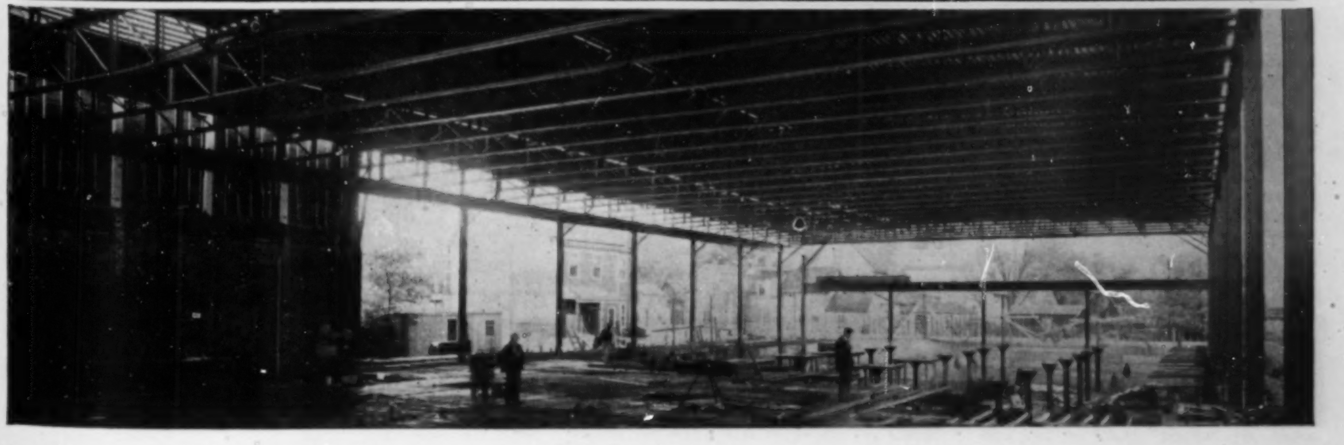
Their solution was a sensible one because these joists not only provided the necessary 80-foot span, but were equally adaptable to roof and floor construction . . . economical in cost . . . light in weight . . . fire-resistant . . . easily and speedily erected . . . allowed passage of pipes and conduits . . . could be accurately located in the structure and easily inspected. In addition, the electrically arc welded joists were completely shop fabricated . . . and reached the job ready to install.

Above and below: Interior view of the Star Market. H. L. Feer & Wm. E. Nast of Boston. Architects. Mark Linenthal, Boston, Mass., Engineer. W. H. Porter Co., Watertown, Gen. Contractor.

Your Sweet's File, or your new Truscon catalog on "Clerespan" Joists will give you complete details on this practical steel construction member. Write for your personal copy of the new Truscon Catalog.

TRUSCON
STEEL COMPANY
YOUNGSTOWN 1, OHIO
Subsidiary of Republic Steel Corporation
Warehouses and sales offices in principal cities

Manufacturers of a Complete Line of Steel Windows and Mechanical Operators • Steel Joists • Metal Lath • Steeldeck Roofs • Reinforcing Steel • Industrial and Hangar Steel Doors • Bank Vault Reinforcing • Radio Towers • Bridge Floors.



PRODUCTS

(*Continued from page 190*)

the panel assemblies and the heating elements are separately packaged in 8-ft lengths, six pieces to a carton, to permit the placing of the back panel and heating element without opening the front panel cartons until needed.

The hot water ratings for the unit are said to range from 370 to 730 Btu per hour, per lineal foot, at water temperatures averaging from 170 to 230 F. The unit is not recommended for use with gravity hot water systems when installed lengths exceed 8-ft. When installed semi-recessed, the unit extends 1½-in. from the wall. All connections are ¾-in. The National Radiator Co., Johnstown, Pa.

Structural Calculating Aid

Designed for use in structural steel design, the *Structural Calculator* is said to save computing time in problems of stress analysis. For each calculation, one operation is claimed to show beam and column selection, bending and axial stresses, ratios and deflections for various load and end connections.

The calculator measures 8 by 10½ in. and is finished with a protective coating to prevent soiling. Each is furnished with an instruction manual containing illustrative examples. Calculator Design Service, Inc., 101 Park Ave., New York 17, N. Y.

Magnesium Wall Forms

The chemical and physical properties of magnesium are being utilized in the fabrication of new lightweight wall forms for use in concrete construction. Said to be easily portable, the forms are made in panels of 3/16-in. plate magnesium, which weigh under 3 lb per sq ft. The thickness is claimed to produce sufficient rigidity to insure smooth wall surfaces without waves or dents.

The advantages cited for the use of magnesium as forms include its being rust-proof, lack of swelling or contraction from moisture, and resistance to corrosion by the alkalis in concrete. Symons Clamp and Mfg. Co., Chicago, Ill.

Free Standing Door Frames

Designed for use with "open-vision" store fronts, new free-standing *Herculite Door Frames* for use with all-glass doors are available in four sizes, with either of two types of anchorage. The frames are fabricated of 6-in., 10.5 lb steel channels, encased in heavy tubular aluminum extrusions. Joints are mitered. Base constructions consist of either a 24-in. cross member bolted to each upright channel and anchored in the door slab, or the uprights extended 18-in. below the finished floor line and anchored in reinforced concrete. Both types have a steel channel stretcher between the bases of the uprights.

(*Continued on page 194*)

The Barcol OVERdoor

This large door on a municipal building, used for an exit by heavy road machines, is *hand-operated* — demonstrating the easy-working quality of the Barcol OVERdoor even in big sizes.

Easy-Working!

The simplest and surest way to tell how well the Barcol OVERdoor works is . . . *work it.* Raise it . . . lower it. Note the roller-bearing glide of the sections . . . upward and downward. *No other overhead door works any easier!*

SEE OUR CATALOG IN SWEET'S

Weathertight!

To keep out weather, a door must close snugly . . . and a really snug door *won't rattle.* So . . . take hold of the handle on that same door that closed so easily . . . and try to rattle it. You can't . . . because the *exclusive closing action* of the Barcol OVERdoor insures all-around weathertightness . . . *and* easy operation!

FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES in PRINCIPAL CITIES

BARCOL

BARBER-COLMAN COMPANY
102 MILL ST. • ROCKFORD, ILLINOIS

Before you specify your next floor . . .

See NEW RUBBER TILE

by the makers of

KENTILE®

All Rubber Tile is not alike...

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COLORS

India Black	420
Waulsort	422
Onyx	423
St. Amande	424
Bardilla	425
Piastra	426
Connemara	427
Pavonazzo	428
Rouge Royal	429
Medoux	430
Vert Maurin	431
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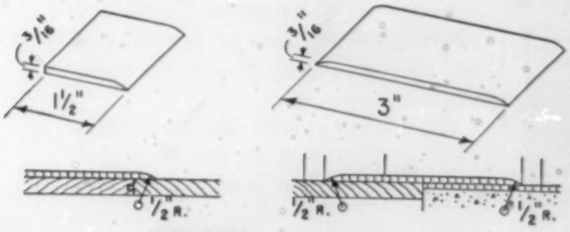
Lilas	433

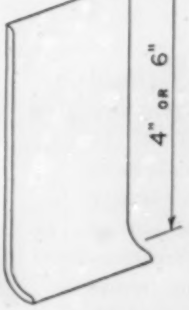
FEATURE STRIPS

1" Wide, 36" long........Black, Red, Green, White, Yellow



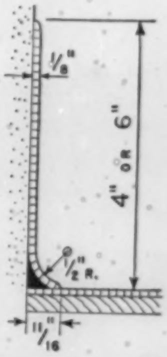
EDGING (*Black Only*)

Double beveled edging . . . 36" long, 3/16" thick, 3" wide
Single beveled edging . . . 36" long, 3/16" thick, 1 1/2" wide



COVE BASE

(Black, Onyx, Connemara, Rouge Royal, only) 42" long, 1/8" thick, 4" high, 6" high (black only).



SIZES

1/8" and 3/16" thick
Stock Sizes: 9" x 9"
18" x 36" (Black, Onyx, Connemara, Rouge Royal, only)
Made To Order Sizes:
6" x 6", 12" x 12", 6" x 12", 9" x 18", 18" x 36"

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9" x 9" Tiles

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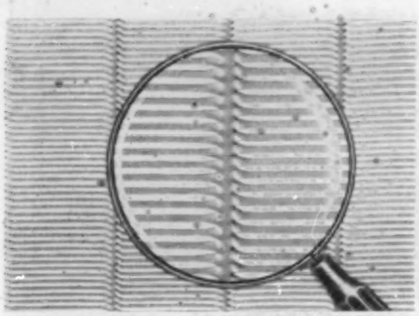

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SHADE SCREENING

Sold by
Kaiser Aluminum & Chemical Sales, Inc.
Kaiser Building, Oakland 12, California

PRODUCTS

(*Continued from page 192*)

The frames are factory assembled, include a *Pittco Checking Floor Hinge,* and are delivered ready to set in place. Finish is of anodized aluminum. They are said to provide adequate resistance to deflection caused by opening the doors. Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh 22, Pa.

Time Lock for Glass Doors

The *Phelps Time Recording Lock* functions both as a 24-hour recording mechanism and lock. Represented as 40 percent smaller than any similar unit, it was developed to provide a practical and inconspicuous time lock for use with all-glass doors.

The lock is reported tamperproof, and simple to install, with no additional key cylinder drilling required. Installed, it records every actual opening, closing the reentry made by key. Phelps Time Recording Lock Corp., 227 Fulton St., New York, N. Y.

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EHW Formula coating is said to provide a tough, transparent and colorless coating on metals that will withstand weather, heat, cold, grease, grit, etc. It is recommended for use on interior and exterior building trim to prevent rust and corrosion and to preserve the polish of the metals.

Manufacturers state that the formula is not a plastic, will not discolor or turn brown, and will add sheen to any metal, plated or baked finish. It can be applied by brushing, spraying or dipping, and is claimed to dry in two minutes. The coating is removed with standard acetates. Temperature Equipment Corp., 4505 Euclid Ave., Cleveland, Ohio.

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Abrasive grain is rolled as an integral part of the upper portion of a new non-skid steel floor plate, called *A. W. Algrip.* The plate reportedly never loses its non-slip characteristic, for new abrasive particles are exposed as the surface wears. Its use is recommended for industrial floors, loading platforms, ramps and walkways. The plates are available from 1/8 to 3/8-in. thick, and in widths up to 60 in. by 144 in. long. Alan Wood Steel Co., Conshohocken, Penn., Dept. W-10.

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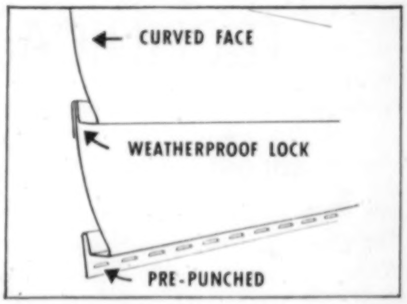

CURVED SURFACE, installed under tension, makes rigid, sound-resistant, insulating siding with weatherproof joints, beautiful shadow lines without wrinkles. Easy to apply. Low construction costs!

Meets FHA requirements for new construction. See Kaiser Aluminum Siding at the NAHB Show in Chicago, February 19 through 23. Write today for free AIA File.

Kaiser Aluminum

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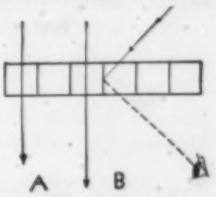
TO WORK ON YOUR NEXT LIGHTING JOB!

Available now in any quantity—attractively priced

Corning FOTA-LITE glass louvered panels can be used in many types of recessed or pendant lighting fixtures, as well as, for continuous row or completely illuminated ceilings. It is available now in any quantity at attractive prices.



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✓ CHECK THESE IMPORTANT ADVANTAGES:

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4. Fota-lite louvers do not loose efficiency over an extended period of time—they are part of the glass.
5. Fota-lite permits dust-tight fixture construction and thereby easy maintenance because only a single flat surface need be cleaned.
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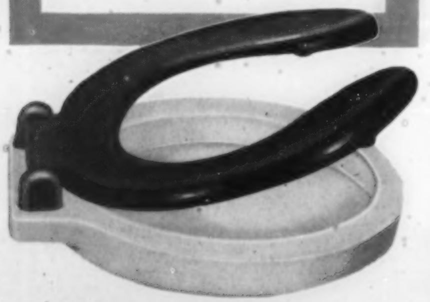

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THE RECORD REPORTS

LITERATURE

(*Continued from page 143*)

and cement paints and rubber base coatings are discussed for basement decoration. 8 pp., illus. Medusa Products Div., Medusa Portland-Cement Co., 1000 Midland Bldg., Cleveland 15, Ohio.*

Automatic Garage Doors

The Calder "400" Door Operator. Folder and attached bulletin describe an electric operator with radio control units for residential purposes and a series of six different sizes of commercial units for heavy duty operation, manually controlled. Advantages, features and specifications are outlined. 8 pp., illus. Calder Mfg. Co., 630 N. Prince St., Lancaster, Pa.

Light Dimmers

Powerstat Light Dimming Equipment for Motion Picture Theaters. Pamphlet outlines benefits to be derived by theater owners and operators through dimming, brightening and blending light by push button-controlled dimmers. Operation, control and performance features are given, with a chart showing ratings, sizes and weights. 8 pp., illus. R. F. Greene, Adv. Mgr., The Superior Electric Co., Hannon Ave., Bristol, Conn.

Corrosion Resistant Materials

Corrosion Resistant Materials and Equipment (Bulletin M). Describes plastic tubing, gasketing, protective coatings, lining materials, grinding and mixing equipment, chemical stoneware and porcelain, tower packing, and corrosion-resistant masonry. Tables of formulation and sizes are included. 8 pp., illus. The U. S. Stoneware Co., Akron 9, Ohio.

Aerial Photo Maps

Wings for the Transit. Basic principles of producing aerial topographic maps and stages in their preparation are explained and pictured in this brochure. Also given are samples of precision aerial photographs, stereoscopic pairs, mosaics, and photogrammetric maps drawn with the aid of stereoplotting instruments. 12 pp., illus., Lockwood, Kessler, & Bertlett, Inc., 32 Court St., Brooklyn 2, N. Y.

Lighting Units

Wiley Recessed Troffers and Spots. Folder gives data, construction details and methods of installation on Wiley

(*Continued on page 198*)

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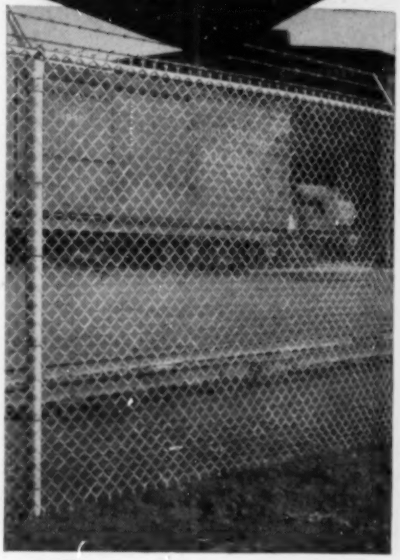

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Wing

Revolving
UNIT HEATERS

THE RECORD REPORTS

LITERATURE

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troffers (open, louvered or glass enclosed) and accent spots, with list prices. Lighting computation tables are included and reports of the Electrical Testing Laboratories, Inc., rate units described. 4 pp., illus. R & W Wiley Inc., Dearborn and Bridge Sts., Buffalo 7, N. Y.

Lenses for Light Control

Corning Lenslites (*Bulletin LS-9*). Dimensioned drawings and sections are given, with notes on efficiency, design and employment of round and square glass lenses for concentrated, spread or deflected beams. Data tables list light distribution qualities, focal lengths, nominal diameters, and shipping weights for nine sizes and types of Lenslites. Details give suggestions for installation in reflector units. Typical candle power distribution curves and specifications are included. 4 pp., illus., Lighting Sales Dept., Corning Glass Works, Corning, N. Y.

Steel Beams

Skyscraper Construction for Every Building with J & L Junior Beams. Booklet gives uses, advantages and technical data for the installation of Junior beams and channels. The phases of floor joist and roof purlin installations are described and illustrated along with sections devoted to construction of light occupancy buildings, industrial buildings and residences. Specifications and tables give spacings, sizes, weights and properties. 24 pp., illus. Jones & Laughlin Steel Corp., Pittsburgh 30, Pa.

Door Hardware

Harloc Precision Built Builders Hardware (*Catalog No. 49*). Presents Harloc's new line of hardware centered around a tubular latch. Descriptions and specifications cover single and double spring latches, push button and tubular cylinder locks, and a variety of entrance handles, knobs, trim and door knockers. 14 pp., illus. Harloc Products Corp., New Haven, Conn.

Diffusing Glass

Magnalite Diffusing Glass (*Brochure M-50*). Describes Magnalite obscuring and diffusing glass panels. Installations in hotels, museums, offices, residences, schools, stores and restaurants are pictured. Technical data includes explana-

(*Continued on page 200*)

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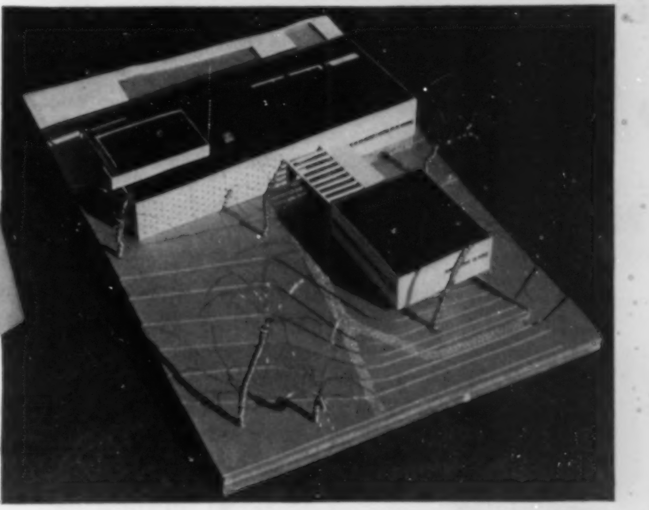
Marcel Breuer:
Architect and Designer
by Peter Blake



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by PETER BLAKE

> "In addition to being a most accomplished artist in his own right, Marcel Breuer has formed a link between the turbulent days of the early twenties, when many of the technical and esthetic ideas that have produced the new architecture were first formulated, and the present day with its increasingly widespread acceptance of those ideas in this country and abroad. This book is an attempt both to document Breuer's own work and to emphasize the main points in the message he is trying to convey."
>
> *Peter Blake*
> *Curator of Architecture and Design, Museum of Modern Art.*

PETER BLAKE'S *"Marcel Breuer: Architect and Designer"* is that rare publishing achievement — a biography which captures *wholly* the essence and spirit of its subject.

The essential meaning of Breuer's career is made clear in this significant and well-documented book as his life and works are traced from his initial contributions to architecture and design at the famous Bauhaus School in Germany to the present time. Considerable space, incidentally, is devoted to the Bauhaus experiment under Walter Gropius which has been responsible for so many notable advances in architecture and design.

Includes Many Reproductions

Fortunately, the author realized that actual reproductions of Breuer's work would explain his growth more graphically than words. Thus, the book is profusely illustrated with plans, drawings and designs made at every stage of the architect's career. In all there are 196 illustrations, giving fascinating glimpses of Breuer's talents in action; showing his increasing interest in architecture, as distinguished from furniture design, and his later pre-occupation with American techniques. The illustrative material includes not only Breuer's designs, but also the works of those who inspired him: the expressionists, Kandinsky and Klee as well as the rationalists, Moholy-Nagy, Albers and Gropius.

★ ★ ★

It is inconceivable that anybody could read Peter Blake's book without learning a great deal. But instruction is not its main concern, nor does it account for the book's intrinsic charm. That charm, rather, lies in its magical unfolding of the drama of a great human being — in the development of a talent which ripened with each new challenge.

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tion of lens diffusion and a table of thicknesses, sizes and weights. Full-size photos illustrate the two available patterns. 4 pp., illus. J. Merrill Richards, 25 Huntington Ave., Boston 16, Mass.

Lift Doors

(*1*) *"Over-the-top" Garage Door Unit No. 20;* (*2*) *"Over-the-top" Garage Door Unit No. 77.* These two folders describe new plywood-panel lift doors, fully equipped and ready to install. Advantages and installation features are discussed. Other door equipment is listed. 2 pp., 4 pp., illus. Frantz Mfg. Co., Sterling, Ill.

Hospital Equipment

Kewaunee Book of Hospital Casework Including Typical Floor Plans and Elevation Drawings (*Catalog 49*). This booklet lists the standard hospital units and fixtures of the Kewaunee line, with illustrations and construction specifications. Forty pages are devoted to typical floor plans and elevations of the various specialized rooms in hospitals, with casework equipment lists for each. 87 pp., illus. Kewaunee Mfg. Co., Adrian, Mich.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Atwood Associates, Architects, 687 Boylston St., Boston, Mass.

Frank Harris and Weston Bonenberger, The School of Architecture, University of Southern Calif., University Park, Los Angeles 7, Calif.

P. M. Heath, Mechanical Engineer, Mech. Engr. Dept. — Wm. H. Deitrick, Archt., 115 W. Morgan St., Raleigh, N. C.

O. B. Laurent Lumber Co., New Roads, La.

Lee Lawrence, Registered Architect, 500 Selby Blvd., South, Worthington, Ohio.

Harry Norman Marggraf, Architect, 8218 South Carpenter St., Chicago 20, Ill.

D. F. Maurier, Draftsman, 1329-11th St., Modesto, Calif.

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Air purification. See "Purifying Air With Glycol Vapor."
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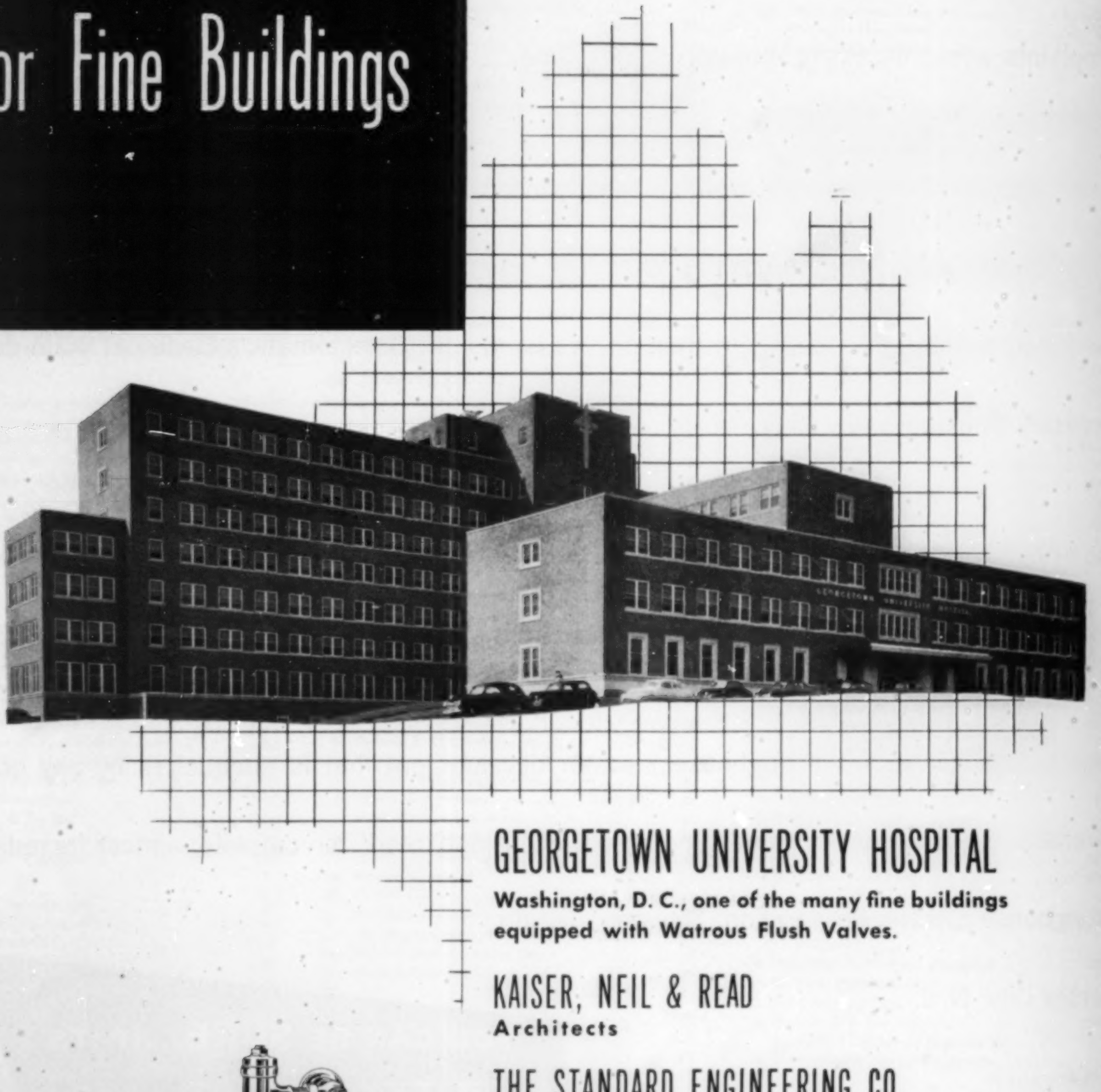

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Plumbing Contractors

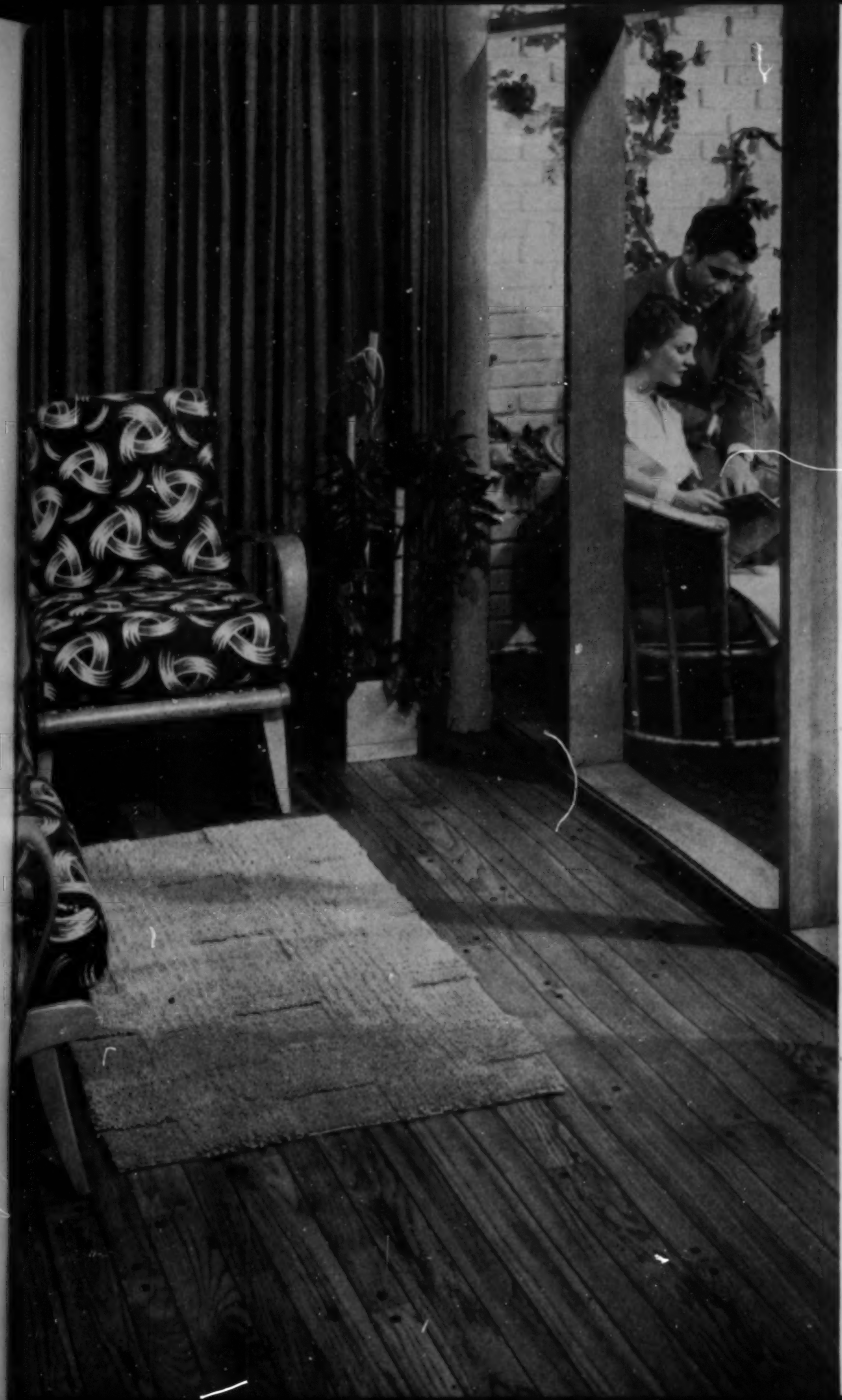
This new Watrous Flush Valve Combination for hospitals, included in above installation, is especially adapted for bedpan cleansers. Eliminates need for special type bowls.

Watrous

ADJUSTABLE FLUSH VALVES

BOTH DIAPHRAGM AND PISTON TYPES

THE IMPERIAL BRASS MANUFACTURING COMPANY
1240 W. Harrison Street, Chicago 7, Illinois



Everybody likes it!

New Bruce Ranch Plank Floor wins praise of Architects and Interior Decorators

Bertram A. Weber, Chicago Architect, says: "The new Bruce Ranch Plank Floor impresses me as being very beautiful and practical. I consider it suitable for both traditional and modern architectural types. The interesting informality of this floor, with its random widths and walnut pegs, is particularly good for rambling ranch-type homes."

Elizabeth Whitney, Chicago Decorator, says: "Decoratively speaking, the Ranch Plank Floor is a real 'find' for both traditional and modern interiors. The random widths make it especially suitable for all Colonial and Provincial styles. In modern rooms, the oak grain and walnut pegs contrast delightfully with plain-textured fabrics and the clean-cut lines of contemporary furniture."

Bruce Ranch Plank Floor

Solid oak with walnut pegs • Alternate 2¼" and 3¼" widths • New "Decorator" Finish

A distinctive floor at moderate cost

This new floor has style and glamour, along with all the natural, colorful beauty of oak. With alternate 2¼" and 3¼" widths and walnut pegs, a Ranch Plank Floor gives an effect similar to expensive random-width plank floors. It has traditional charm with a fresh, modern appearance. Yet this floor is inexpensive . . . in fact, costs little more than an ordinary strip floor and is just as easily installed. Mail coupon at right for literature with photographs in color. E. L. BRUCE CO., MEMPHIS 1, TENN.

Mail this coupon for data file

BRUCE

E. L. BRUCE CO.
MEMPHIS 1, TENN.

Send complete information on the new Bruce Ranch Plank Floor to:

*Name*________________________

*Address*________________________

*City & State*________________________

Why not draw on Carrier experience?

AIR CONDITIONING
Carrier

Let's face it. Planning efficient, year-round air conditioning for new or existing buildings is an exacting job. You've got to know the science of air conditioning—and you've got to know air conditioning equipment. Right there are two reasons for choosing Carrier.

Carrier doesn't build just units—it builds *complete* air conditioning for any need. It may be a Weathermaker for a suite of offices or a retail store, or a Weathermaster System for a multi-room building.

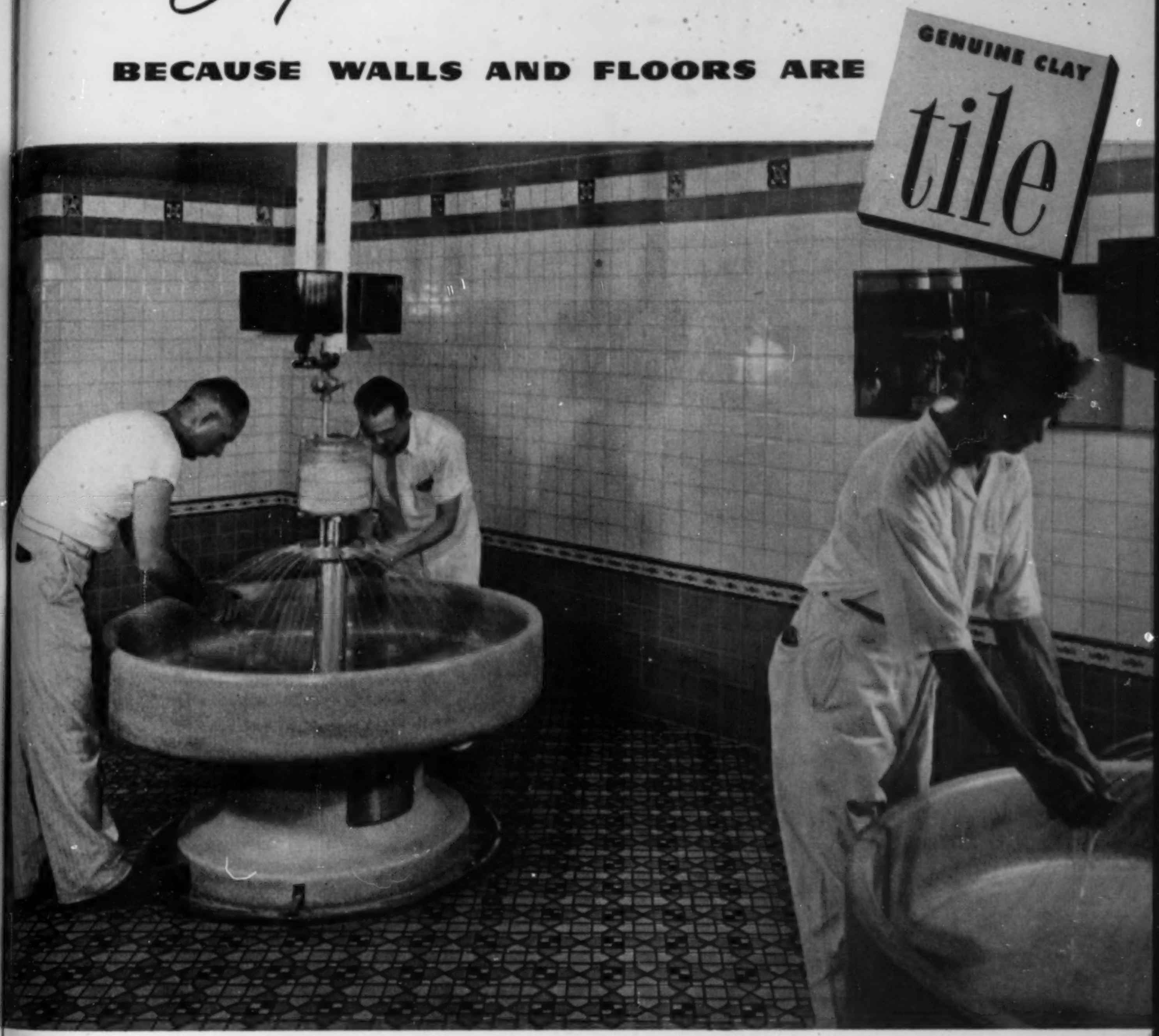
Whatever the size or type of installation, you know it's right when it's Carrier from A to Z. Every piece of Carrier equipment is designed to operate at peak efficiency in conjunction with other Carrier components to give a balanced system.

And behind Carrier Air Conditioning stands the most experienced engineering staff in the business, ready and eager to help you with technical assistance. Every Carrier branch office and every Carrier air conditioning dealer can provide the expert service of factory-trained engineers. Carrier engineers have teamed up for years with architects and consulting engineers to bring the finest possible air conditioning to each individual job. Carrier Corporation, Syracuse, New York.

Carrier AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING

ALWAYS *Easy to clean*... ALWAYS GOOD LOOKING

BECAUSE WALLS AND FLOORS ARE GENUINE CLAY tile



"There's no better surface!" That's what one manufacturer says about the genuine clay tile used on the walls and floors of this carefully planned, modern industrial washroom.

He particularly likes the sharp drop in maintenance cost that always goes hand-in-hand with a clay tile installation. For genuine clay tile shrugs off water, soaps, acids and grease, leaving no fade marks, streaks or scars. Moreover, the handsome colors are good for a lifetime—they're fired-in!

You'll find that clients appreciate specification of genuine clay tile. They know that costly replacement, painting and refinishing are unheard of wherever tile is used. It's in to stay—it stays good-looking!

Today, genuine clay tile is available—there is no need to accept substitutes. For specific information, see Sweets Architectural or A-E-C File. THE TILE COUNCIL OF AMERICA, *Room 3401:* 10 East 40th Street, New York 16, New York. *Room 433:* 727 West Seventh Street, Los Angeles, California.

The Tile Council of America was formed in January, 1945, to provide a central source of information about clay floor and wall tile, and to sponsor research and development projects designed to increase the usefulness of clay tile in all types of private and public building.

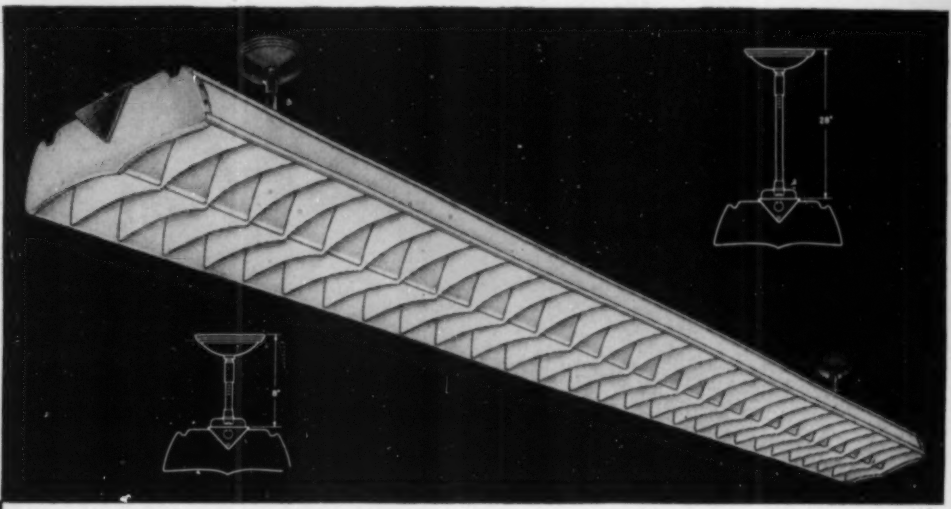
PARTICIPATING COMPANIES: American Encaustic Tiling Company, Inc. • Architectural Tiling Company, Inc. • Atlantic Tile Manufacturing Company • B. Mifflin Hood Company • Cambridge Tile Manufacturing Company • Carlyle Tile Company • General Tile Corp. • Gladding, McBean & Company • Mosaic Tile Co. • Murray Tile Company, Inc. • National Tile & Manufacturing Company • Olean Tile Company • Pacific Clay Products • Pacific Tile and Porcelain Co. • Pomona Tile Manufacturing Company • Robertson Manufacturing Company • The Sparta Ceramic Company • Summitville Face Brick Company • United States Quarry Tile Company

THE MODERN STYLE IS CLAY TILE

NOW!

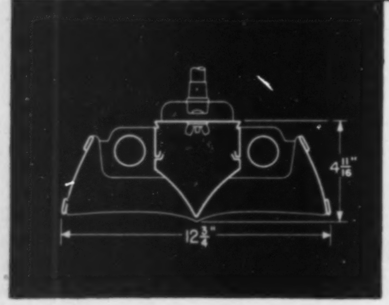
DAY-BRITE'S LUVEX

NEW!



469

For two 96" T-12 Slimline lamps, single unit or continuous installations. For suspension mounting, listed with 8" and 28" "A-J" Adjustable hangers.



"DECIDEDLY BETTER" SLIMLINE

Once in a blue moon, a truly great fixture makes its appearance. Now, after years of research and designing, the matchless new Day-Brite "LUVEX" is ready.

All the usual advantages of Slimline, of course — instant starting . . . extremely high efficiency.

But then, add these "LUVEX" extras—sturdy, *no-sag*, heavy gauge steel chassis, *enclosure and louvers completely interlocked into a rigid one-piece unit*, quick, easy installation and smart appearance—and the "LUVEX" is absolutely *everything* you expect of Slimline lighting.

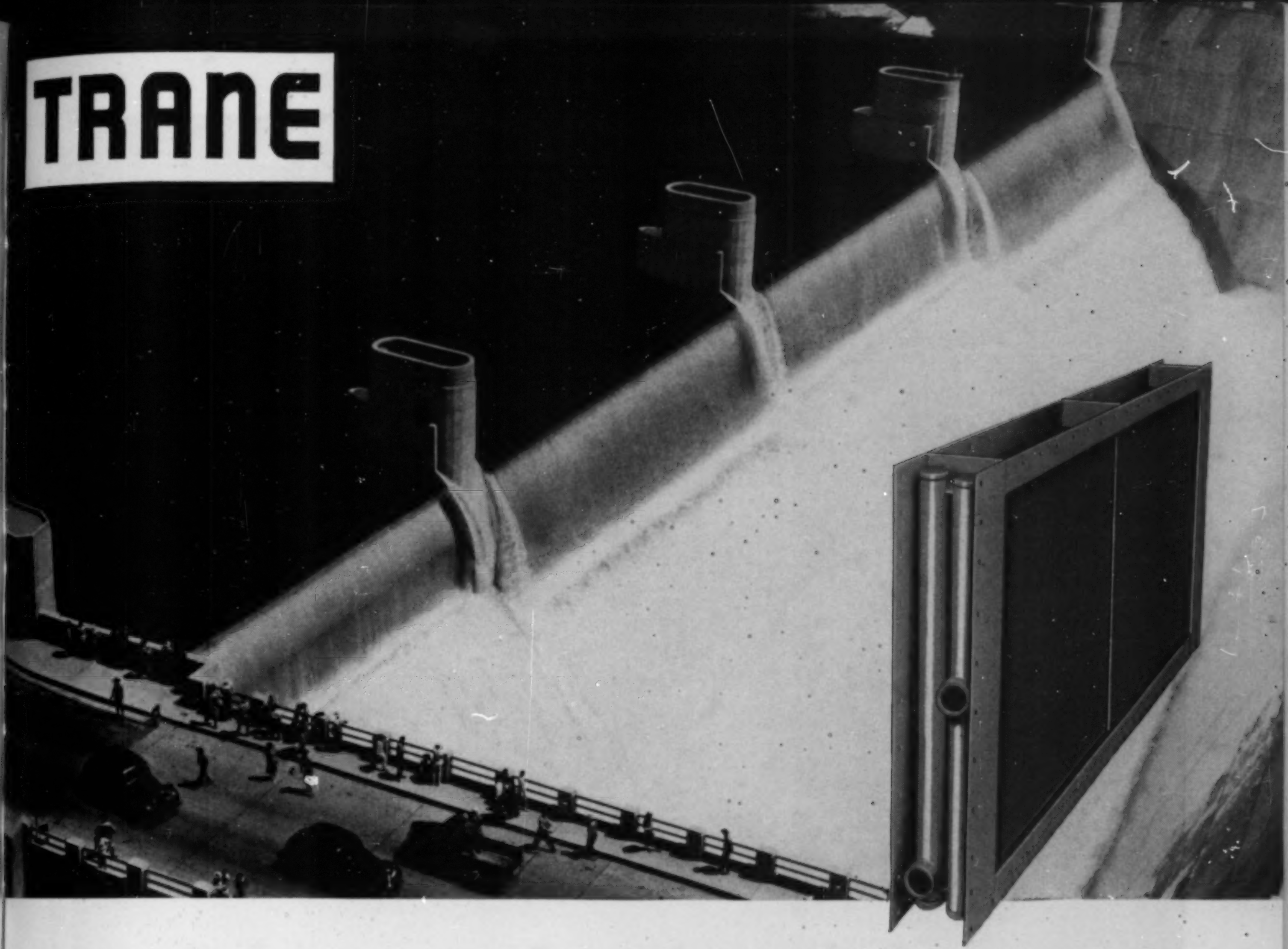
Maintenance? *Simple!* So simple, in fact, that the "LUVEX" can be relamped and cleaned without disturbing a single part of the fixture—without so much as touching a latch, chain, nut or bolt!

Get the full "LUVEX" story. It will pay you to know all the facts about this remarkable new Day-Brite development. Write today for Bulletin 10-M.

IT'S EASY TO SEE WHEN IT'S
DAY-BRITE
Lighting

Distributed nationally by leading electrical wholesalers
Day-Brite Lighting, Inc., 5465 Bulwer Ave., St. Louis 7, Mo.
In Canada: Amalgamated Elec. Corp., Ltd., Toronto 6, Ontario

TRANE



These coils stand dam-high pressures

Boulder Dam on the Colorado River is the highest dam in the world—727 feet. And, since a column of water 1 inch square and 2.31 feet high will exert a pressure of 1 pound, Boulder Dam represents a potential pressure of 315 pounds per square inch.

Impressive as this pressure is, it is dwarfed by the pressures against which Trane Coils are designed to operate.

On Trane *High Pressure* Coils, Type WH, there is no practical pressure limit: *Any pressure that may be required for any normal commercial or industrial service can be handled effectively by a Trane design.*

Even so-called low pressure coils, such as the popular Type E, used on ordinary heating and ventilating work, withstand pressures far over normal requirements. Type E coils used on pressures as low as 5 or 10 pounds are tested for and may safely be used on pressures as high as 200 pounds.

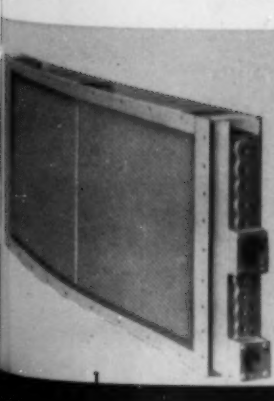
And 200 pounds, translated into "dam height", is some 426 feet, which, incidentally, is only 88 feet under the height of the world's second highest dam—Grand Coulee.

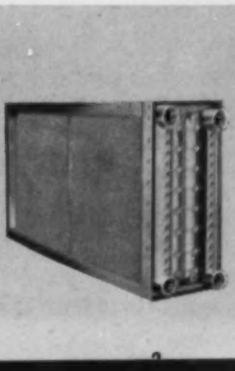
Why not ask the Trane sales engineer in your area to tell you more about these husky, heavy duty heat exchangers?

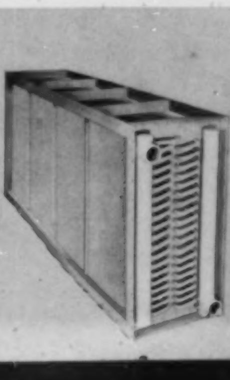
THE TRANE COMPANY . . . LA CROSSE, WIS.

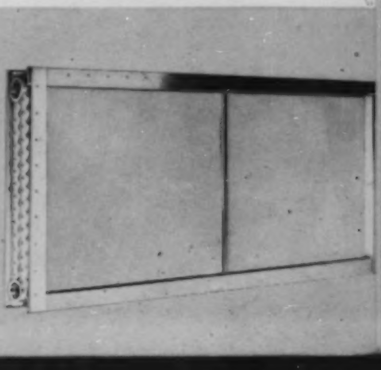
Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment—Unit Heaters, Convector-radiators, Heating and Cooling Coils, Fans, Compressors, Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties . . . IN CANADA, TRANE COMPANY OF CANADA, LTD., TORONTO.

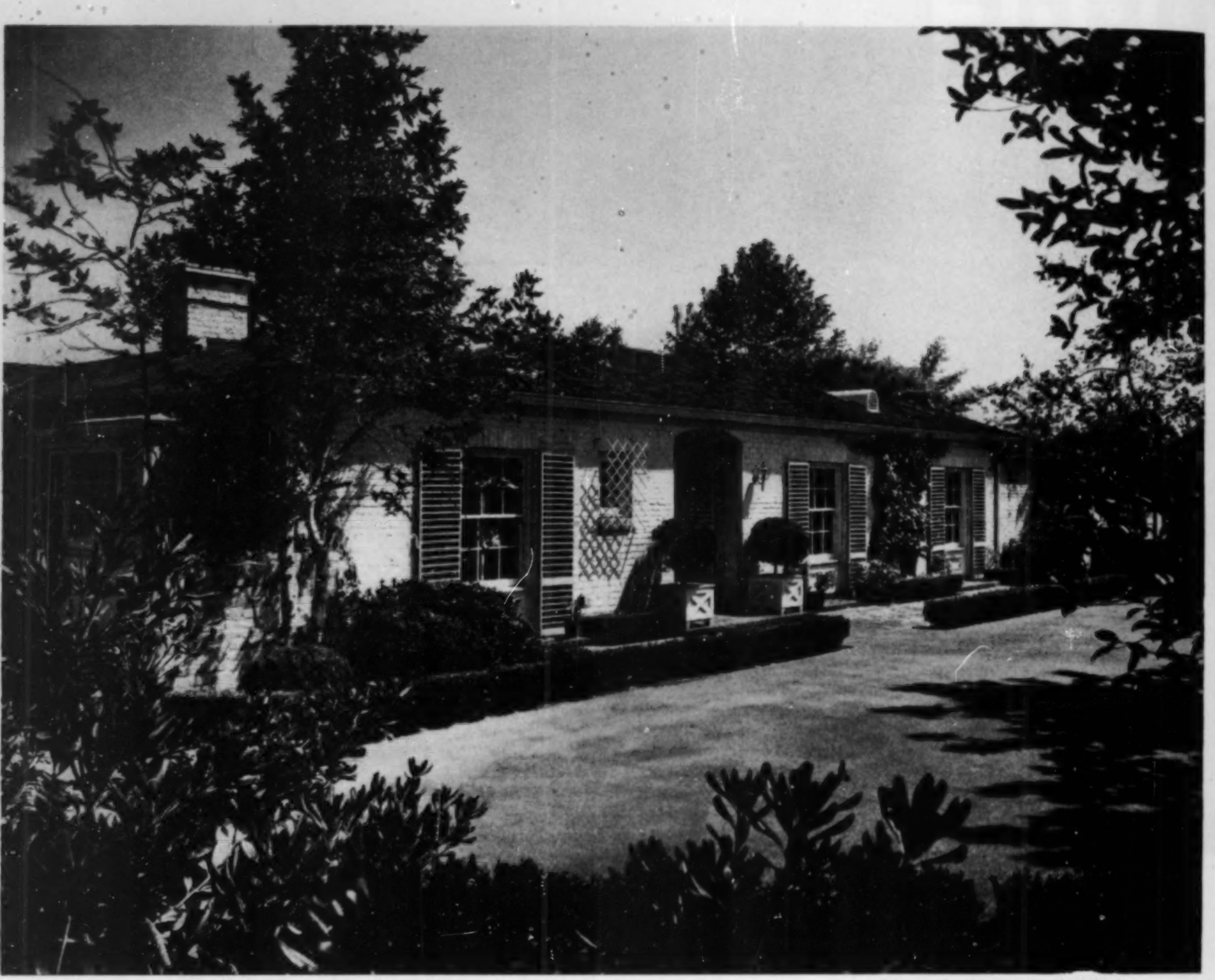
Trane heating and cooling coils are available in a huge array of sizes, styles, and types. Shown here: 1. Type SDS, the non-freeze heating coil with famous Trane Kinetic Orifices; 2. Type R cleanable cooling coil with removable headers; 3. Type OS cooling coil with drainable tubes; 4. Type DE coil for direct expansion refrigerants, with exclusive Trane equalizing distributors; 5. Type E, versatile all-around heating coil.





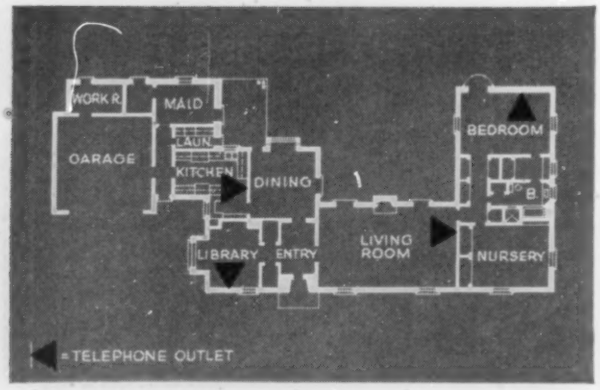






Jerome G. Armstrong, Architect

TELEPHONE RACEWAYS ARE A PART OF ITS BEAUTY


WORK R.
MAID
LAUN.
GARAGE
KITCHEN
DINING
BEDROOM
B.
LIVING ROOM
LIBRARY
ENTRY
NURSERY
◀ = TELEPHONE OUTLET

Telephone raceways are a sign of a better built home.

The beauty of the home you build can also be enhanced by things that *don't* show. For, when you conceal telephone wires you run no risk of detracting from the attractiveness of walls and woodwork.

It's easy to hide telephone wires if you plan ahead. First, select the proper locations for telephone outlets. Then, while construction is under way, a few lengths of pipe or tubing can be placed inside the walls. This will later carry the telephone wires to each outlet chosen.

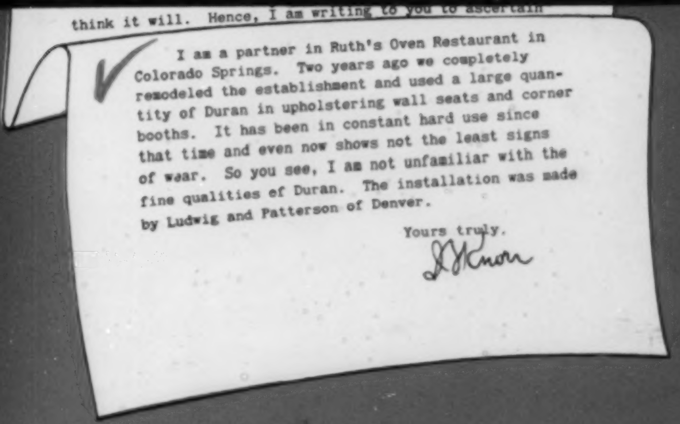
Your Bell Telephone Company will be glad to help you plan modern, built-in telephone facilities for any home you build. Just call your telephone business office and ask for Architects and Builders Service.

BELL TELEPHONE SYSTEM

Duran
all plastic
UPHOLSTERY
COVERING

RUTH WICKERSHAM
RECOMMENDED BY DUNCAN HINES
OFFICIAL AAA RESTAURANT
L. S. KNORR
Ruth's Oven
Colorado Springs, Colorado

Selected and Endorsed



think it will. Hence, I am writing to you to ascertain

I am a partner in Ruth's Oven Restaurant in Colorado Springs. Two years ago we completely remodeled the establishment and used a large quantity of Duran in upholstering wall seats and corner booths. It has been in constant hard use since that time and even now shows not the least signs of wear. So you see, I am not unfamiliar with the fine qualities of Duran. The installation was made by Ludwig and Patterson of Denver.

Yours truly,
L S Knorr

Here's still *another* example showing how decorative, practical Duran meets the exacting upholstery requirements in outstanding restaurants . . . and an indication of how its beauty, cleanability and serviceability can be the right answer for you.

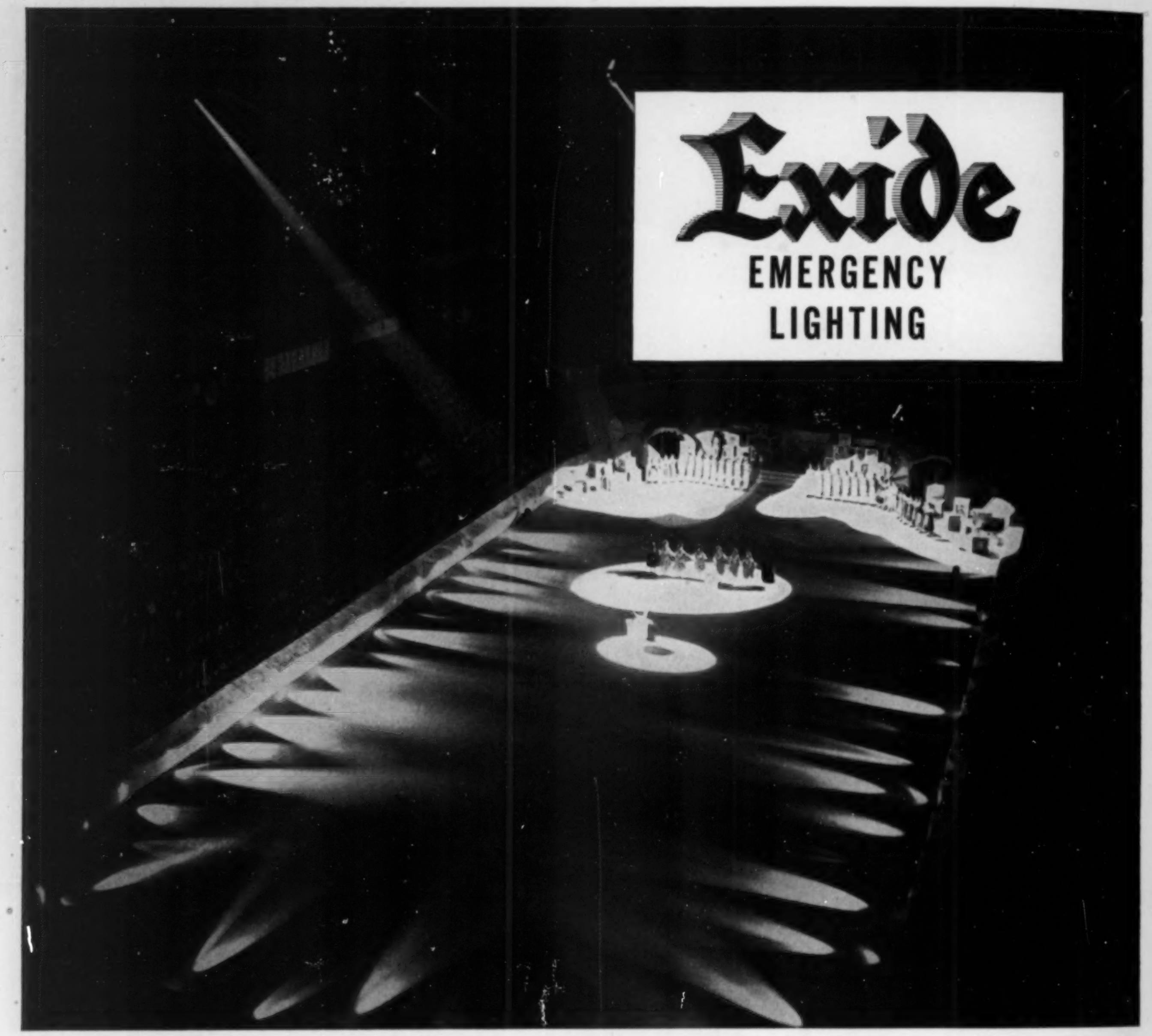
For the utmost in upholstery satisfaction . . . for the superb luxury accent on booths, stools and panelling, specify Duran all-plastic.

Corner of Ruth's Oven Restaurant, Colorado Springs, Colo. Booth Seating Upholstered in Duran by Ludwig and Patterson of Denver.

Resists damage from spills — easily cleaned

No flaming—self extinguishing from burns

THE MASLAND DURALEATHER COMPANY • 3236-90 AMBER STREET • PHILADELPHIA 34, PA.



Helps safeguard lives and property when normal electric current fails

In stadia, recreational buildings, theaters and other places of public assembly, sudden lighting failure may have tragic consequences. This is equally true of hospitals, schools, stores . . . wherever crowds gather at night.

Such lighting failures are not uncommon. They can happen anywhere, at any time. For, despite all precautions of utility companies, accidents beyond their control can cause interruptions of normal electric current. Storms, floods, fires and collisions occur with little or no warning, and are a serious menace to electric power lines.

Safeguard the buildings you design against lighting failure. Exide Emergency Lighting provides safe, sure, modern protection. Batteries are always fully charged and respond *instantly* and *automatically* when needed.

1888 . . . DEPENDABLE BATTERIES FOR 61 YEARS . . . 1949

"Exide" *Reg. Trade-mark U. S. Pat. Off.*

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • *Exide Batteries of Canada, Limited, Toronto*

BRIXMENT
makes better
STUCCO
and
PLASTER,
too!
A CEMENT FOR MASONRY
BRIXMENT
LOUISVILLE CEMENT CO.

You yourself know, probably from years of experience, that Brixment has many advantages for masonry—unusual plasticity, strength, bond, water-retention and freedom from efflorescence.

Brixment is equally superior for stucco and plaster, too. It can be used in leaner mixes, hence practically eliminates hair-checking and crazing. Its greater plasticity permits faster and smoother application. It also resists moisture. It is mixed and applied exactly like Portland-cement stucco *except that no lime is required.*

Brixment is being widely used with lightweight aggregate for interior plaster, because it is extremely economical, moisture-resistant and durable.

This 119-year-old company manufactures Portland cement and lime as well as Brixment. We ourselves use Brixment for stucco and plaster in our own construction. We recommend it to you. Write to us direct or ask your dealer for a copy of the handbook, "*Brixment for Stucco and Plaster.*"

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

Sometimes You Can Still
Get a Baker's Dozen!

No longer does your baker toss the extra cookie in the bag, but you can still get extra value—and plenty of it—in drop-forged Von Duprin panic exit devices.

They provide the safest, fastest, surest means of exit, together with strength, precision and durability wholly beyond comparison.

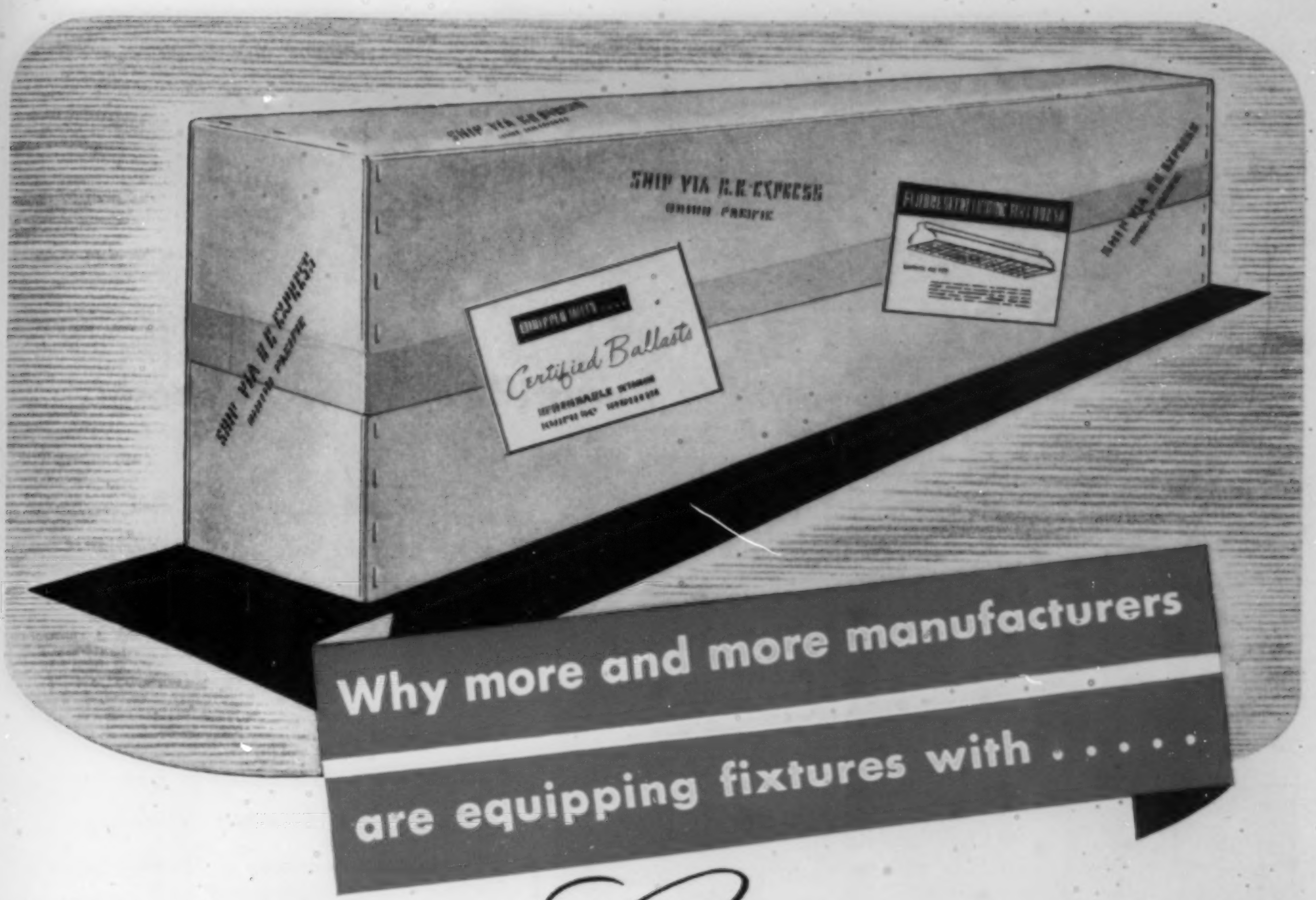
Yet, strangely enough, when you install drop-forged Von Duprins, you get all this top quality and top performance at the lowest cost per year. Freedom from maintenance and repair expense soon offsets the original price of the devices, and from then on the over-all annual cost becomes lower each year throughout the long life of the building.

That is, we believe, really getting yourself an old-fashioned Baker's Dozen.

Von Duprin
PANIC DEVICES
ASSURE SAFE EXIT

Von Duprin

VON DUPRIN DIVISION, VONNEGUT HARDWARE CO., INDIANAPOLIS 9, IND.


SHIP VIA R.R. EXPRESS
UNION PACIFIC
Certified Ballasts
Why more and more manufacturers
are equipping fixtures with . . . . .

CERTIFIED BALLASTS

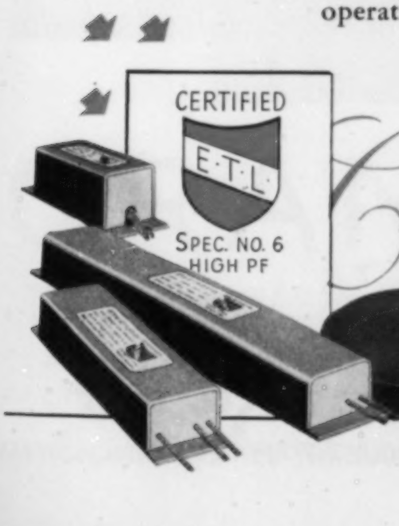
● Do customers complain that fluorescent tubes in your fixtures seem to burn out too soon? Perhaps the trouble lies in the ballast that operates them.

One of the advantages of CERTIFIED BALLASTS is that they assure *Full Lamp Life.* Leading fluorescent tube manufacturers recognize that CERTIFIED BALLASTS in a fixture are evidence that full rated tube life should result.

Other worthwhile advantages of CERTIFIED BALLASTS include: *Rated Light Output* and *Long Dependable Performance.*

CERTIFIED BALLASTS are made to exacting specifications, then tested and certified by Electrical Testing Laboratories, Inc., an impartial authority, to assure best operation of tubes and ballasts.

Your fixtures sell more readily—give greater customer satisfaction—when they are equipped with CERTIFIED BALLASTS.


CERTIFIED
E·T·L
SPEC. NO. 6
HIGH PF

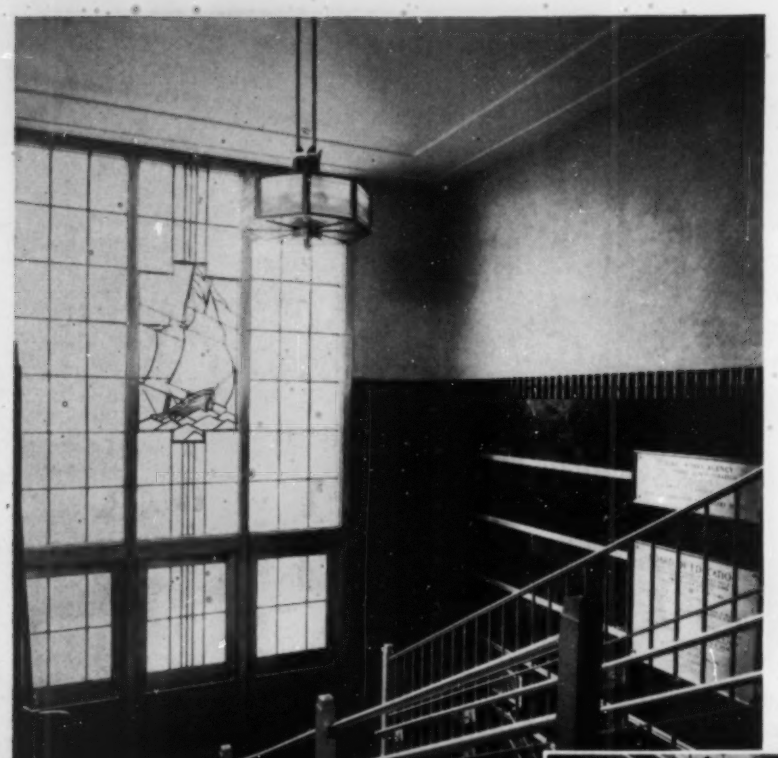
CERTIFIED BALLAST MANUFACTURERS

Makers of Certified Ballasts for Fluorescent Lighting

2116 KEITH BLDG., CLEVELAND 15, OHIO

marble

protects the child while it beautifies his environment



If Marble had no other argument in its favor than the continued protection it gives to good health and clean environment, it would still be the most valuable of all surfacing materials.

But beyond this inimitable characteristic, Marble is a sound investment, even from the standpoint of maintenance economy. The low-cost-of-upkeep of Marble affords *measurable savings year after year.*

Nothing is more enduring than Marble, nothing more sanitary. No other material is more easy to maintain or keep clean.

Write Managing Director for latest literature on foreign and domestic marbles. Dept. 59-F

MIA

Marble Institute of America, inc.

108 FORSTER AVENUE, MOUNT VERNON, N. Y.

A SINK FOR ANY TASTE

A PRICE FOR ANY BUDGET
SEE CRANE

As to the name, there is no question . . . *your own customers* have established Crane as the favorite name in plumbing.

So choosing a sink for any one of them becomes a matter of size and price. And here, too, Crane has everything your customers may wish—a sink for every space, a price for every purse. One or two basins . . . single or double drainboards . . . Crane has them in all combinations, including the most complete counter-top installations you'll find.

This breadth of line is typical of Crane wherever you see it. In bathrooms, too, where Crane offers complete groups in every price bracket. Again in home heating, where Crane supplies every requirement for any system . . . hot water, warm air, or steam . . . coal, coke, oil, or gas.

When making selections from the complete Crane line, you'll find it helps to check your plans with your Crane Branch or Crane Wholesaler.

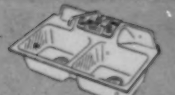
THE HOMEMAKER. *This compact sink is ideal for small kitchens—basin, drainboard, and plenty of storage in a 42" space. Outlet accommodates General Electric Disposall.*

CRANE

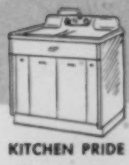
CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO 5

PLUMBING AND HEATING •
VALVES • FITTINGS • PIPE

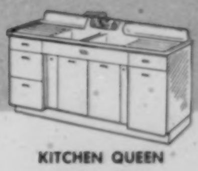
CRANE KITCHEN SINKS **range all the way from 38" to 72" in width, include such popular features as retractable hose spray . . . swinging mixing spout . . . fingertip Dial-ese controls.**



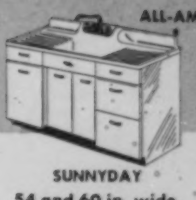
ALL-AMERICAN
38 in. wide



KITCHEN PRIDE
38 in. wide



KITCHEN QUEEN
72 in. wide



SUNNYDAY
54 and 60 in. wide

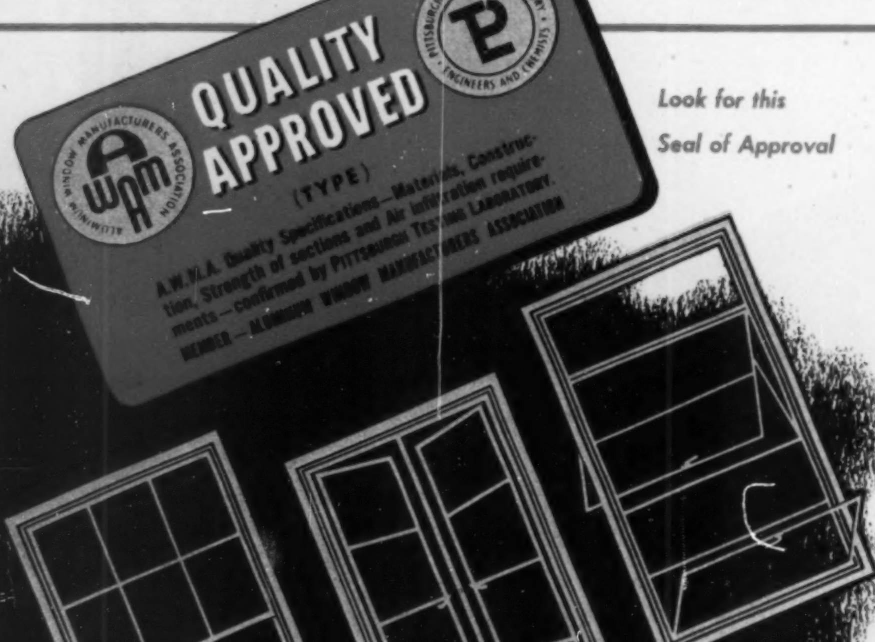
NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

GOOD LOOKS
EASE OF OPERATION
NEVER ANY PAINTING
LOW MAINTENANCE
YEARS OF TROUBLE-FREE SERVICE

These are the reasons for the

ALUMINUM

FOR HOSPITALS **FOR MONUMENTAL AND COMMERCIAL BUILDINGS**


ALUMINUM WINDOW MANUFACTURERS ASSOCIATION
AWMA
QUALITY APPROVED
(TYPE)
PITTSBURGH TESTING LABORATORY
PTL
ENGINEERS AND CHEMISTS
A.W.M.A. Quality Specifications—Materials, Construction, Strength of sections and Air Infiltration requirements—confirmed by Pittsburgh Testing Laboratory.
MEMBER—ALUMINUM WINDOW MANUFACTURERS ASSOCIATION

*Look for this
Seal of Approval*

Read those five reasons over again!

They are the reasons the demand for "Quality-
proved" aluminum windows continues to grow—
all types of buildings.

They are the reasons you continue to get client sa
faction from all who already have these windows.

They are the features your clients get every time
specify "Quality-Approved" aluminum windows.

Not *all* aluminum windows are "Quality-Approv
It is important to *know* which are. Only those alumi
windows which have been tested by the independ

*Aluminum Window
Manufacturers Associatio*

Pit
spe

Th
hu
sta
sou

Ma
wi
for
qua
wri

eneral Service Bldg., Univ. of Michigan, Ann Arbor, Mich.
chitects: Harley, Ellington & Day

Rotogravure Bldg., Philadelphia Inquirer, Philadelphia, Pa.
Architects: Albert Kahn Associates

Mercy Hospital, Springfield, Ohio
Architects: Maguolo & Quick

the ever-growing demand for "Quality-Approved" WINDOWS!

GS FOR SCHOOLS FOR RESIDENCES, LARGE AND SMALL

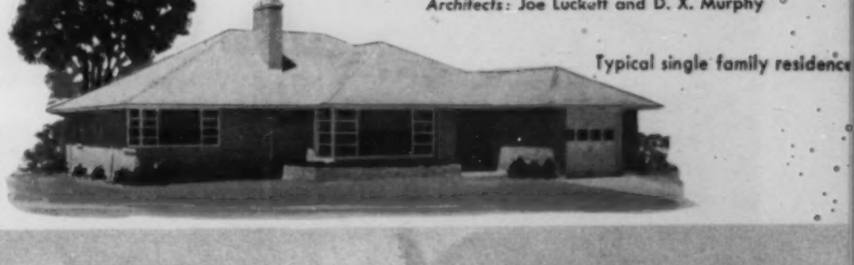
Pittsburgh Testing Laboratories—and conform to rigid specifications—can bear the Seal of Approval.

This seal assures you of aluminum windows—double-hung, casement or projected—that meet the highest standards for quality materials, strength of sections, soundness of construction, and minimum air infiltration.

Make sure of *all* five features. Specify only aluminum windows bearing the "Quality-Approved" seal. For information and names of manufacturers whose windows qualify for the seal, consult Sweet's (Section 16a/3) or write to Dept. AR-12.

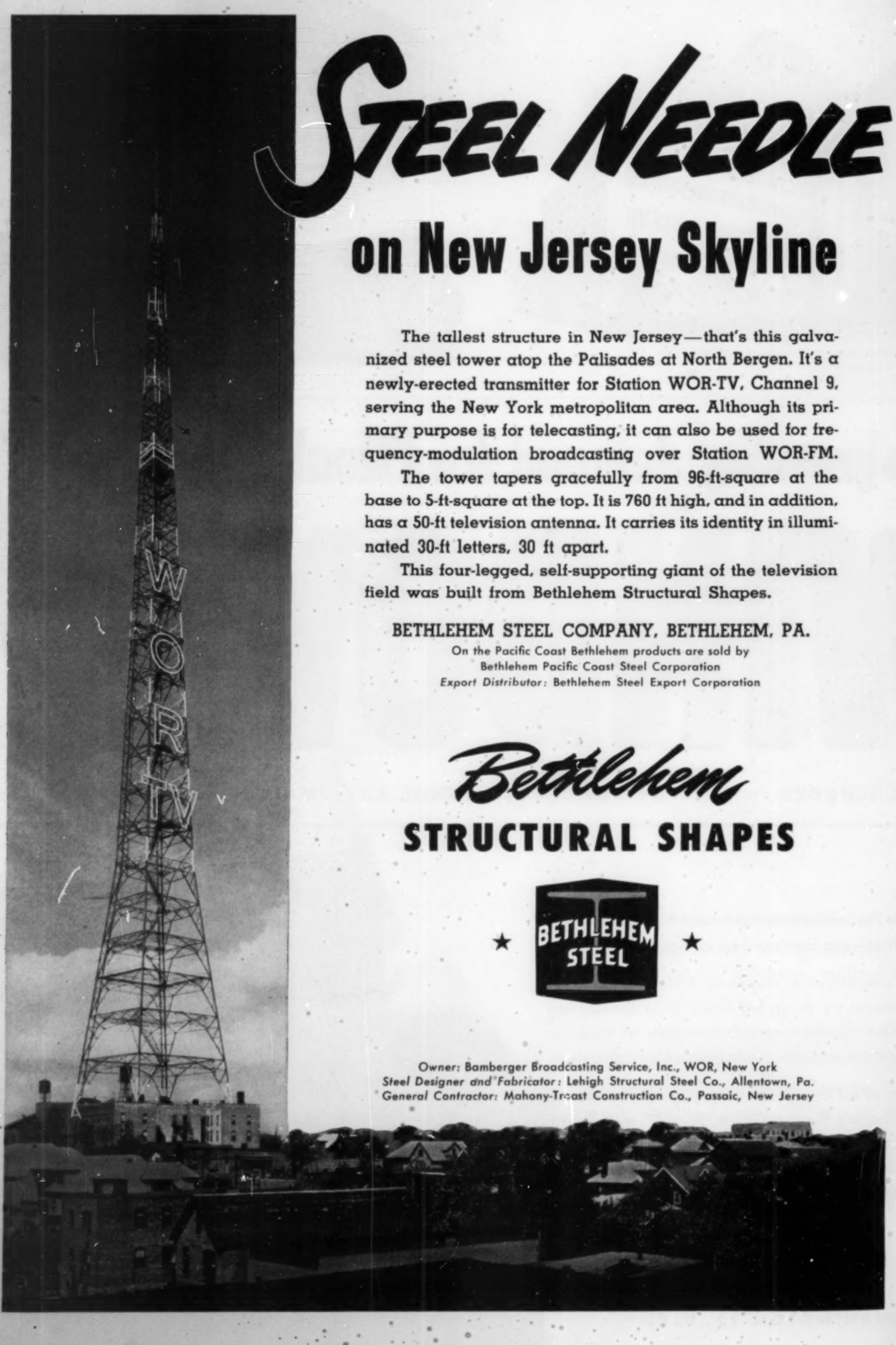
209 CEDAR AVENUE
TAKOMA PARK
WASHINGTON 12, D.C.

Section of Lynn Acres Housing Project, Louisville, K
Architects: Joe Luckett and D. X. Murphy



Typical single family residenc

members: A. B. C. Steel Equipment Co., Inc., Tampa, Florida ★ The Adams & Westlake Company, Elkhart, Ind. ★ The William Bayley Company, Springfield, Ohio ★ Cupples Products Corporation, St. Louis, Missouri ★ General Bronze Corporation (anc *its subsidiary The Aluminum Window Corporation*), Garden City, New York ★ Sterling Windows, Inc., New York City, N. Y. ★ Windalume Corporation, West New York, New Jersey



STEEL NEEDLE
on New Jersey Skyline

The tallest structure in New Jersey—that's this galvanized steel tower atop the Palisades at North Bergen. It's a newly-erected transmitter for Station WOR-TV, Channel 9, serving the New York metropolitan area. Although its primary purpose is for telecasting, it can also be used for frequency-modulation broadcasting over Station WOR-FM.

The tower tapers gracefully from 96-ft-square at the base to 5-ft-square at the top. It is 760 ft high, and in addition, has a 50-ft television antenna. It carries its identity in illuminated 30-ft letters, 30 ft apart.

This four-legged, self-supporting giant of the television field was built from Bethlehem Structural Shapes.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

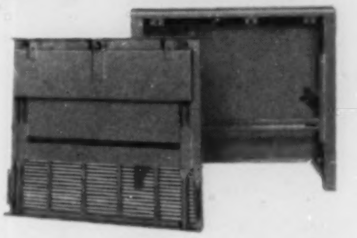
Bethlehem
STRUCTURAL SHAPES

★ BETHLEHEM STEEL ★

Owner: Bamberger Broadcasting Service, Inc., WOR, New York
Steel Designer and Fabricator: Lehigh Structural Steel Co., Allentown, Pa.
General Contractor: Mahony-Troast Construction Co., Passaic, New Jersey

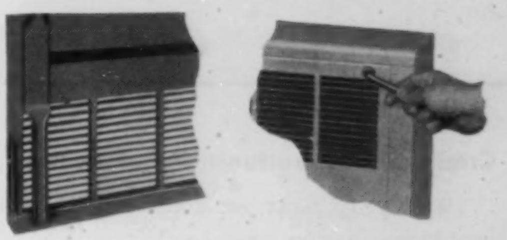
Specify Modine Institutional Convectors For Heavy-Duty Applications

BUILT TO "TAKE IT"



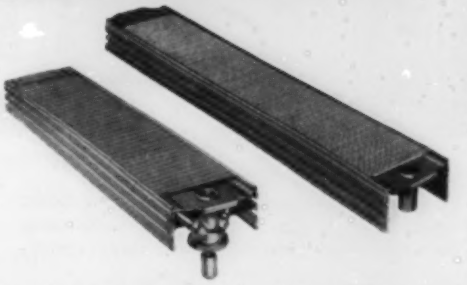
Modine Institutional Convector enclosures are built like a battleship. Formed from extra heavy gauge steel, they are sturdily reinforced for rugged service. Their Directflo grilles of 14-gauge steel are integral with the front (not welded to it). Yes . . . for the same reason architects and engineers use heavier-than-standard equipment and materials for public and institutional buildings, they specify Modine Institutional Convectors for these applications. They know it pays off in lower maintenance costs . . . yet adds relatively little to the total cost of the building.

DESIGNED FOR THE JOB



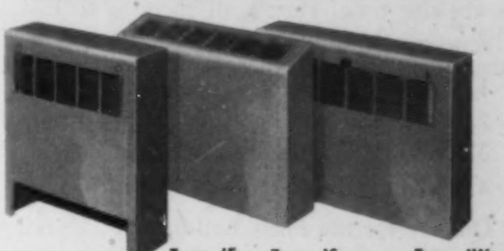
Modine Institutional Convector design is functional . . . takes into consideration those problems applying specifically to schools, hospitals and public buildings. For example, close louvre spacing in grilles makes it impossible to insert objects thicker than an ordinary lead pencil. Modine lock-type front and damper (available at slight extra cost) solves a problem for institutions where easy removal of the convector front or tampering with the damper is to be avoided.

TWO TYPES OF HEATING UNITS



Institutional convectors are available with standard heating unit for hot water or two-pipe steam . . . or with new Quiet-Seal heating unit specifically designed for one-pipe steam. From inlet to outlet, all-copper or copper-alloy headers, tubes and fins give you highest heating capacity. Tubes, brazed to headers, form a rugged pressure-resisting unit guaranteed for steam pressures up to 150# gauge. Fins, metallically bonded to tube walls, insure permanent, corrosion-free contact of primary to secondary heat transfer surface . . . your assurance of continuously excellent performance.

3 TYPES OF ENCLOSURES

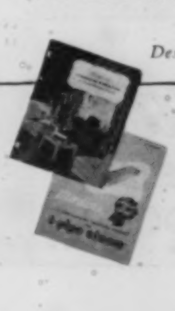


Type IF **Type IS** **Type IW**

Choose from three enclosure types designed for heavy-duty service. *Type IF* with upper grille and a choice of lower opening or lower grille . . . for either recessed or free-standing installation. For installation *on the wall* there is the *Type IW* and *Type IS*. *Type IS* has a solid steel front with outlet grille in its sloping top. All enclosures have heavy 14-gauge steel fronts. Dampers are optional at a slight extra charge.

For the full story, call your Modine Representative. He's listed in the "Where-to-Buy it" section of your phone book. Or write direct. Modine Mfg. Co., 1510 Dekoven Ave., Racine, Wisconsin.

Design and Mechanical Patents Pending



Send for New Modine Convector Catalog No. 249 Today! Special 1-Pipe Steam Convector Bulletin Also Available.

Modine
CONVECTORS

R-1047

How can you get so much quality ...FOR SO LITTLE COST?

Complete installed unit of Fenestra Swing Door. Available with glass or metal panels. Entrance door with larger glass upper panel also available.

Credit this opportunity to a design idea.

. . . an idea to make one door so that it could be used swing-in or swing-out—that could be made up of standard stiles and rails—with standard metal or glass panels—to fit into standardized frames.

This permits one Fenestra* Stock Hollow Metal Door to be used in any one of twelve ways. Flexibility of use for you. Savings in production for us, passed along in lower first cost.

This economy permits the use of high quality materials and workmanship to make these doors suitable for the finest of buildings.

Savings in installation are just as important. These doors come to the job—complete with frames and hardware. Mortising, drilling, tapping and prime-painting are done at the factory. That saves on-the-site time. Here's all there is to installing a Fenestra Hollow Metal Door:

1. Bolt the strong frame together.
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4. Hang the door.

Quality for the finest buildings . . . savings in first cost and in the field. Quick shipment. Order your Fenestra Doors, complete with frames and hardware, from the plant or from convenient local stocks. For further information, call your local Fenestra Representative (see phone book listing), check Sweet's Architectural File, Section 15a/7, or write Detroit Steel Products Company, Dept. AR-12, 2252 E. Grand Blvd., Detroit 11, Michigan.

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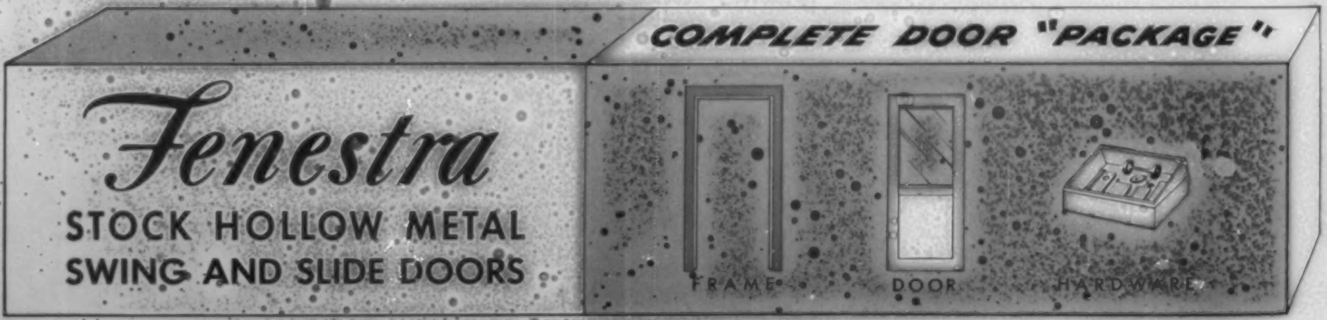

Fenestra

STOCK HOLLOW METAL SWING AND SLIDE DOORS

THE

Contract Method

OF

CONSTRUCTION

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PUBLIC FUNDS

Since its inception 30 years ago, THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA has maintained an unceasing effort to give the construction-buying public the most for its construction dollar.

To the Contract Method of Construction the 5,300 general contractor members of THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA, performing more than 80% of the nation's contract construction, bring Skill, Integrity and Responsibility—the result of long years of experience in their field.

In the hands of these contractors the taxpayer's dollar brings the greatest return in construction.

Public works construction is financed by the taxpayer's dollar. Construction by contract is the best way to assure the taxpayer that his dollar is economically spent. Here are the reasons why:

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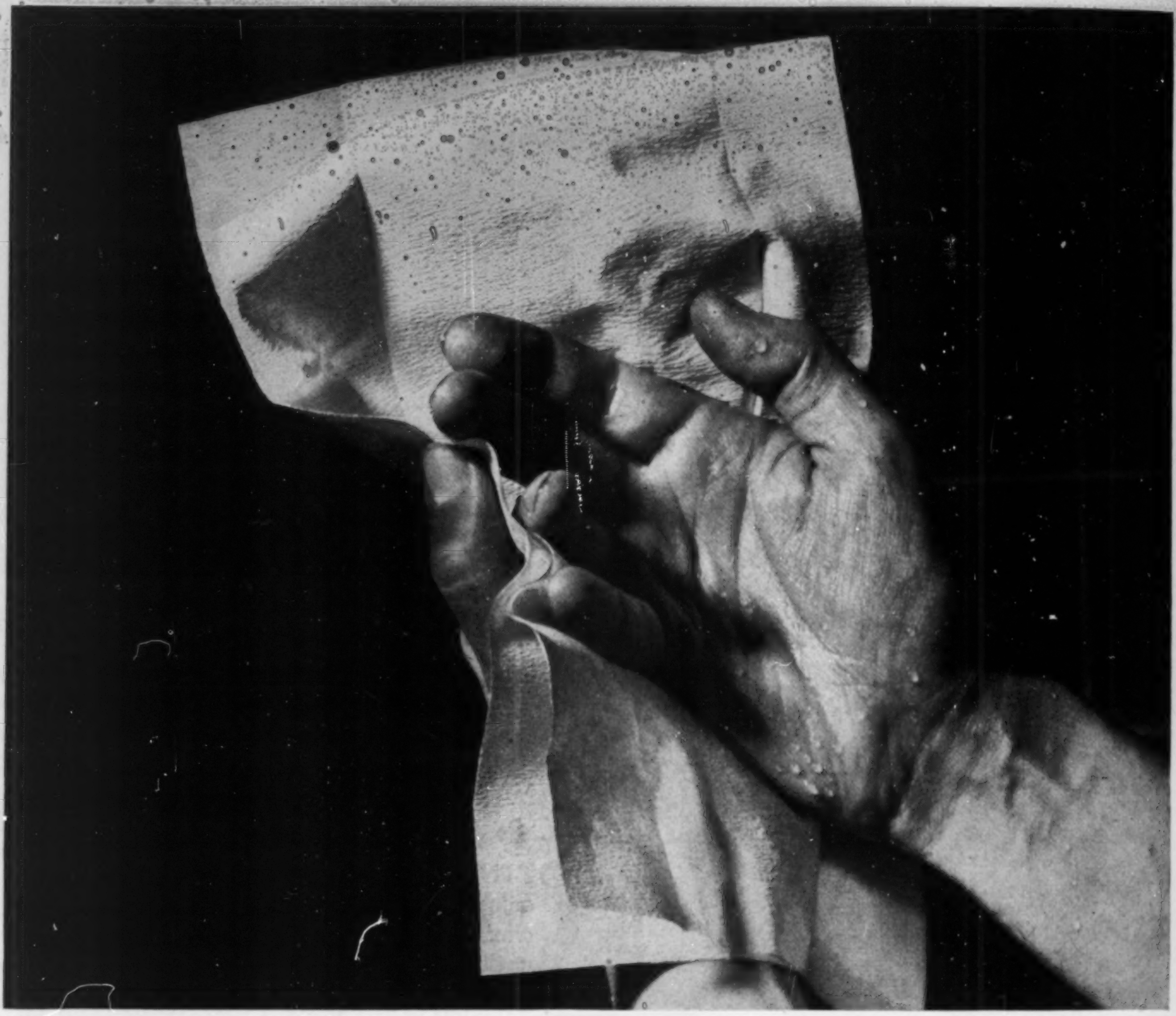
SKILL, INTEGRITY, RESPONSIBILITY IN CONSTRUCTION OF BUILDINGS, HIGHWAYS, RAILROADS, AIRPORTS, PUBLIC WORKS



Washrooms rank as one of the four most important factors in good working conditions—according to a survey of workers from 400 plants.

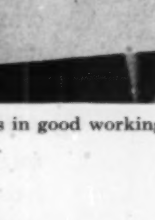
In these hands... a good investment for any company

It's important for a company to make new friends and to keep old ones. Washrooms can do a lot to help. Don't *you* feel rather insulted by a washroom that isn't *right?*

Clean, modern, *carefully planned* washrooms help promote friendly relations. That's why you do your client a real service when you make sure his washrooms *are* right.

ScotTissue Towels are a symbol of the right kind of washroom. Include ScotTissue Towel cabinets in your washroom planning. Send for our free booklet that's filled with helpful suggestions, well-tested plans and diagrams (by an architect specializing in this field) for large and small washrooms, etc. Write to the Scott Washroom Advisory Service, Chester, Pa.

Trade Marks "ScotTissue," "Washroom Advisory Service," Reg. U. S. Pat. Off.



SCOTTISSUE TOWELS

Symbol of the right kind of washroom

Only good weather gets through PLEXIGLAS

Light, shatter-resistant Plexiglas completely encloses and stormproofs the spacious Sky Cabana atop Atlantic City's Senator Hotel. Curved transparent side glazing and custom corrugations in rectangular and triangular roof panels were formed in the hotel's own shops—and installed by the hotel's maintenance personnel.

Durable Plexiglas glazing lets sunshine *in*—seals stormy weather *out*—brings maintenance costs *down*. High winds and flying objects leave this *outdoor plastic* unharmed, because Plexiglas is many times stronger than glass—though only half as heavy.

If high glass breakage is skyrocketing your costs—or if your glazing problem involves curved sections—you need Plexiglas. This rugged acrylic plastic survives hard impacts that would shatter glass. Yet, because of its lightness, Plexiglas can be installed quickly, safely and with a minimum of support—even in large-area openings. And because of its formability, Plexiglas can be curved or shaped easily and economically.

In more and more hotels, schools, industrial plants and housing projects, Plexiglas is paying for itself in savings on glazing replacements. It can do the same for you. Write today for full details of optically clear, patterned or corrugated translucent Plexiglas for glazing.

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brings full secondary power *anywhere*

From the small machine shop, using only 20 or 30 feet of duct, to giant plants employing over 15,000 feet, bus duct makes a distinct improvement in secondary power distribution.

Automotive plants; metalworking shops; steel and textile mills; food processing plants; department stores; office buildings; these are only a few of the thousands of places enjoying bus duct's low-cost installation, reduced maintenance and availability of power where needed.

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Steel Pipe is First Choice for this modern heating method . . .

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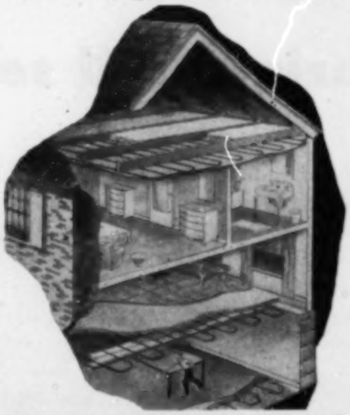
Now, of course, modern engineering has extended the comforts of heat to every room in the house, and has expanded the choice of effective systems to include the growing *radiant heating* method. American home owners have taken to Radiant Heating with enthusiasm, not only because of its popular advantages, but because time-tested materials in which they have *confidence* are "part and parcel" of the system.

Durable, reliable, economical *steel pipe* . . . the same pipe that has been keeping America warm for decades . . . is the *heart* of Radiant Heating. Proved through more than 60 years of service in conventional hot water and steam systems, *steel pipe is*, naturally, *first choice* for *Radiant Heating*, too.



What radiant systems need, steel pipe has! Easy to form and weld. Expansion co-efficient same as concrete and plaster. Outlasts useful life of building. Economical.

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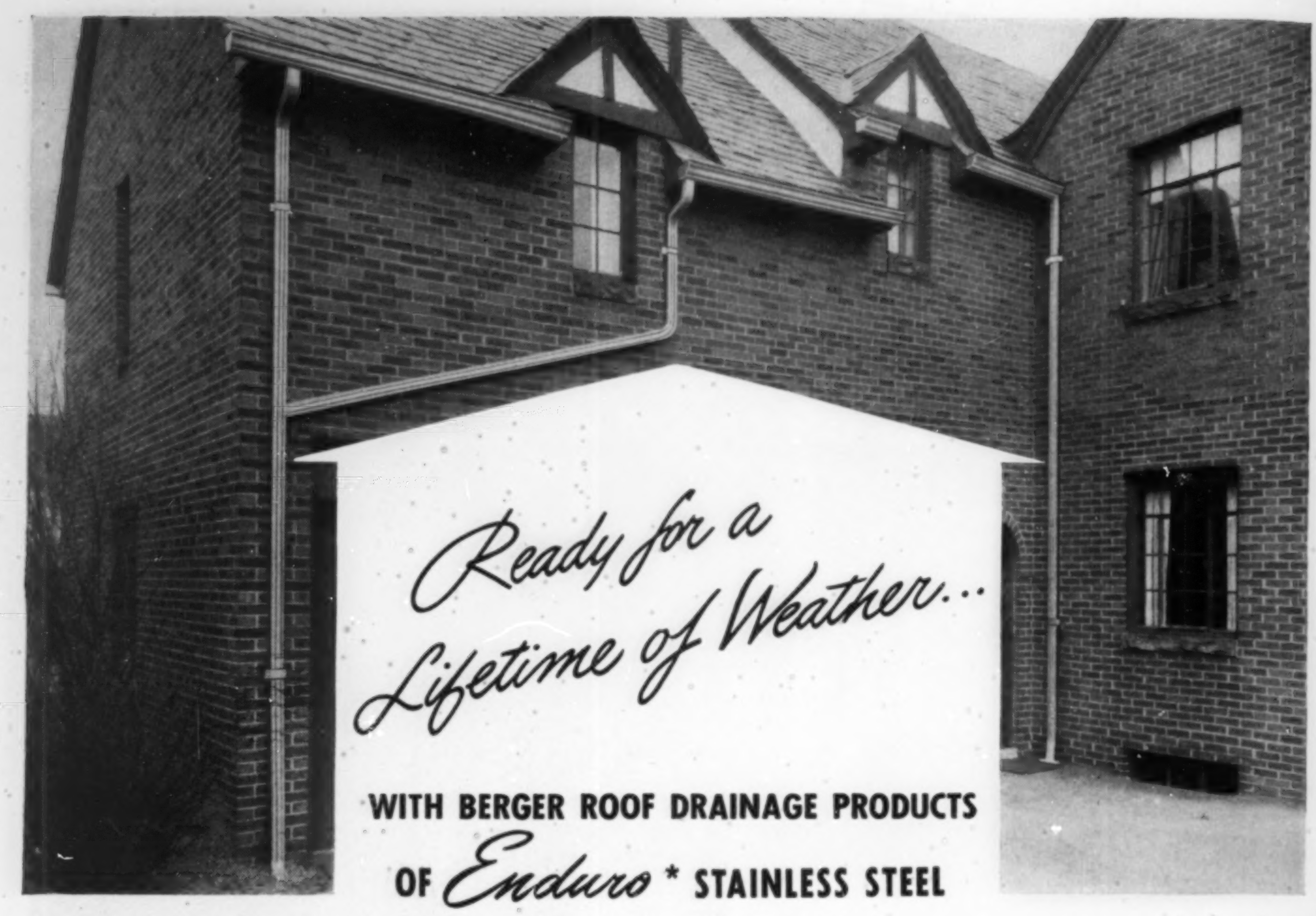

WITH BERGER ROOF DRAINAGE PRODUCTS OF *Enduro* * STAINLESS STEEL

North, south, east or west . . . no home escapes the ravages of weather. Roof drainage systems particularly are exposed. But, when made up of weather-resistant Berger Roof Drainage Products of ENDURO Stainless Steel, they can escape the damaging effects of ice, snow, sleet, rain, freezing cold and blistering heat.

Republic ENDURO Stainless Steel "gets along well" with weather . . . and with corrosive industrial atmospheres, too. It does not rust or tarnish . . . retains a soft, natural beauty through the years. Its high strength enables it to stand up under heavy loads of ice and snow. It withstands severe temperature changes without expansion cracking or buckling. It resists abrasion and denting . . . does not bleed or discolor paint . . . requires little or no maintenance . . . lasts for the life of the building . . . costs your client less in the long run.

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DRAINAGE PRODUCTS

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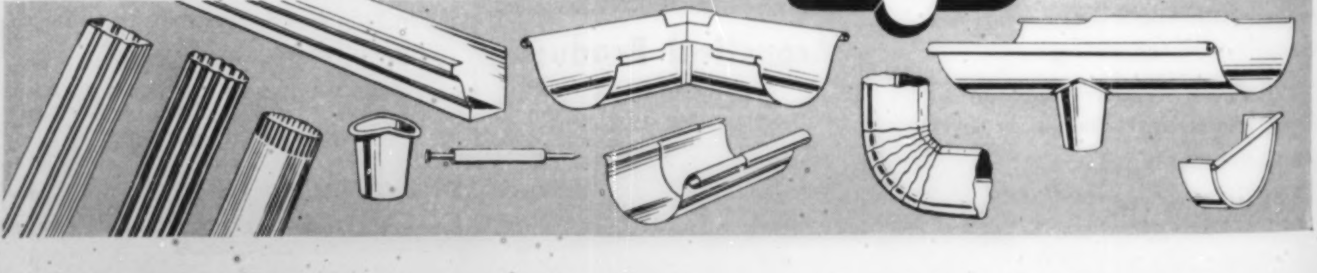

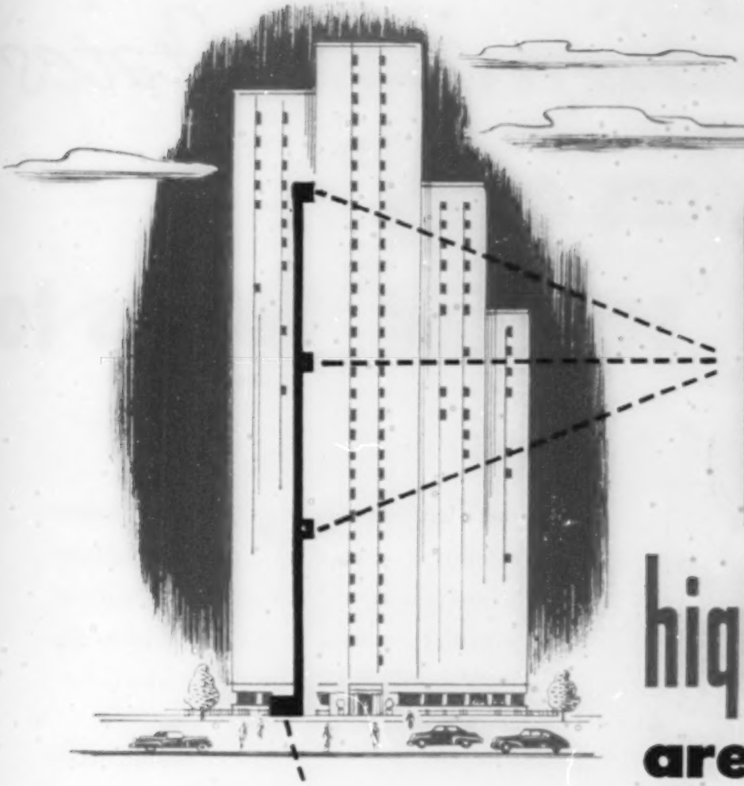

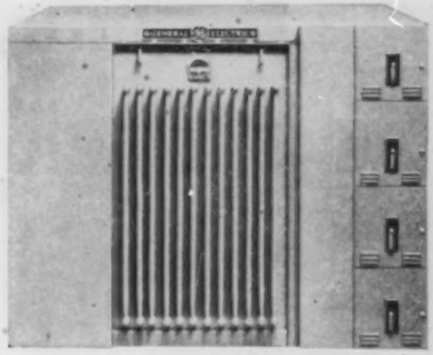

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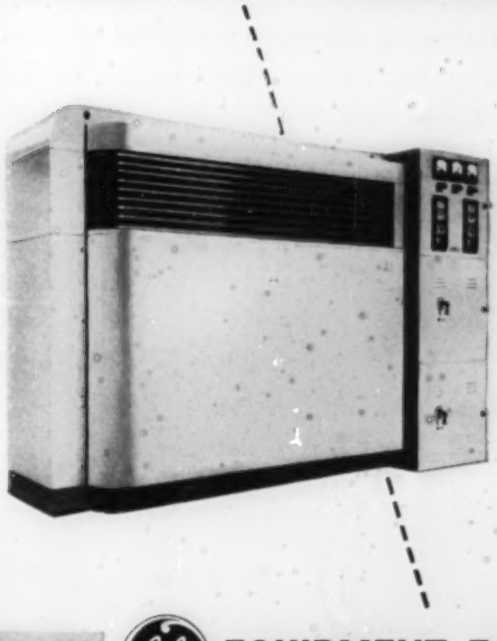
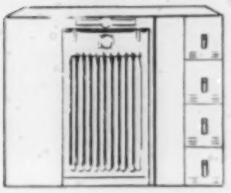
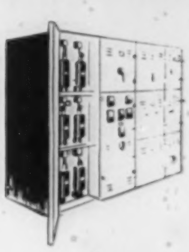


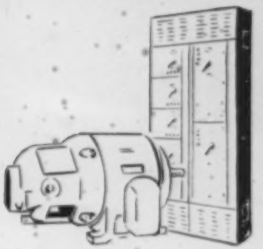
EQUIPMENT FOR COMMERCIAL BUILDING



Power-distribution Systems



Rectifiers for Power Conversion



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In the sunny Southern Pacific States

Even the interiors enjoy year 'round "sunshine" thanks to

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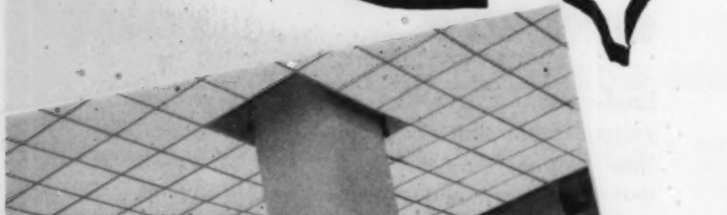

Dept. Store, El Paso, Texas. Architect, Alderholt & Boaz, Oklahoma City, Okla. Contractor, J. E. Morgan & Sons. Authorized Suntile Dealer, Artcraft Tile Shop, El Paso, Texas

Residence, Los Angeles, Calif. Designer, Mrs. Wm. Brownstein. Builder, Jack Pine. Authorized Suntile Dealer, Tiling Service, Inc., Los Angeles, Calif.

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Suntile

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For more complete information see Sweet's. The Cambridge Tile Mfg. Co., Cincinnati 15, O.

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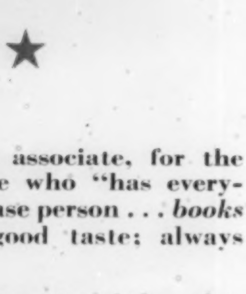

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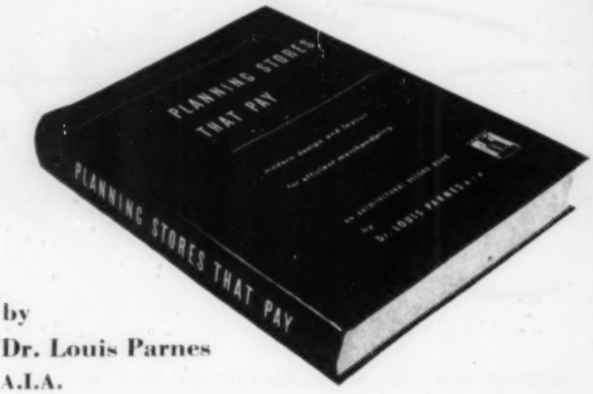

by
Dr. Louis Parnes
A.I.A.

"Planning Stores That Pay" reveals the simple but scientific new techniques for deriving optimum store design from available financial data. Object: maximum per-dollar sales per square foot.

With this book architects can demonstrate to a store administrator, in his own language and figures, the economic soundness of their design, and thereby relieve his basic worry, and clear the way for greater freedom in the conception of decor.

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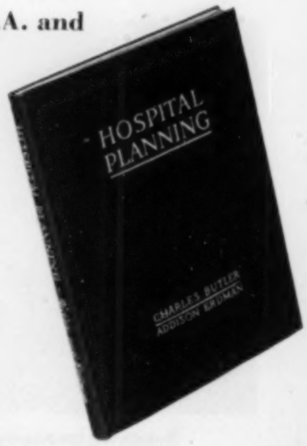
Hospital Planning

by Charles Butler, F.A.I.A. and Addison Erdman, A.I.A.



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266 illustrations: 32 photographs, 11 site plans, 187 floor plans, and 38 special unit plans of rooms, wards, departments and construction details. 232 pages, 8½ x 11. Stiff cloth binding. Comprehensive Index. $15.00.

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by Peter Blake

This fascinating life story of the great contemporary architect, Marcel Breuer, is that rare publishing achievement — a biography which captures wholly the essence and spirit of its subject.

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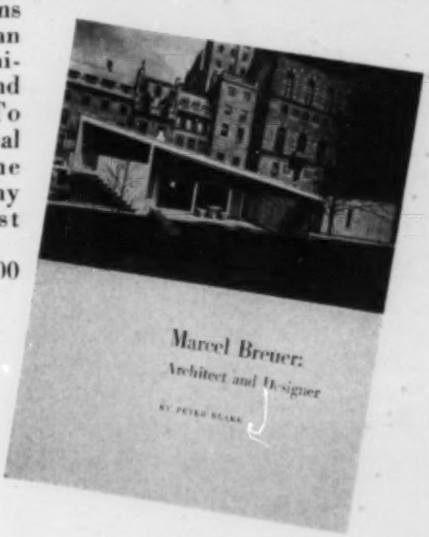
$4.00



196 illustrations
128 pages
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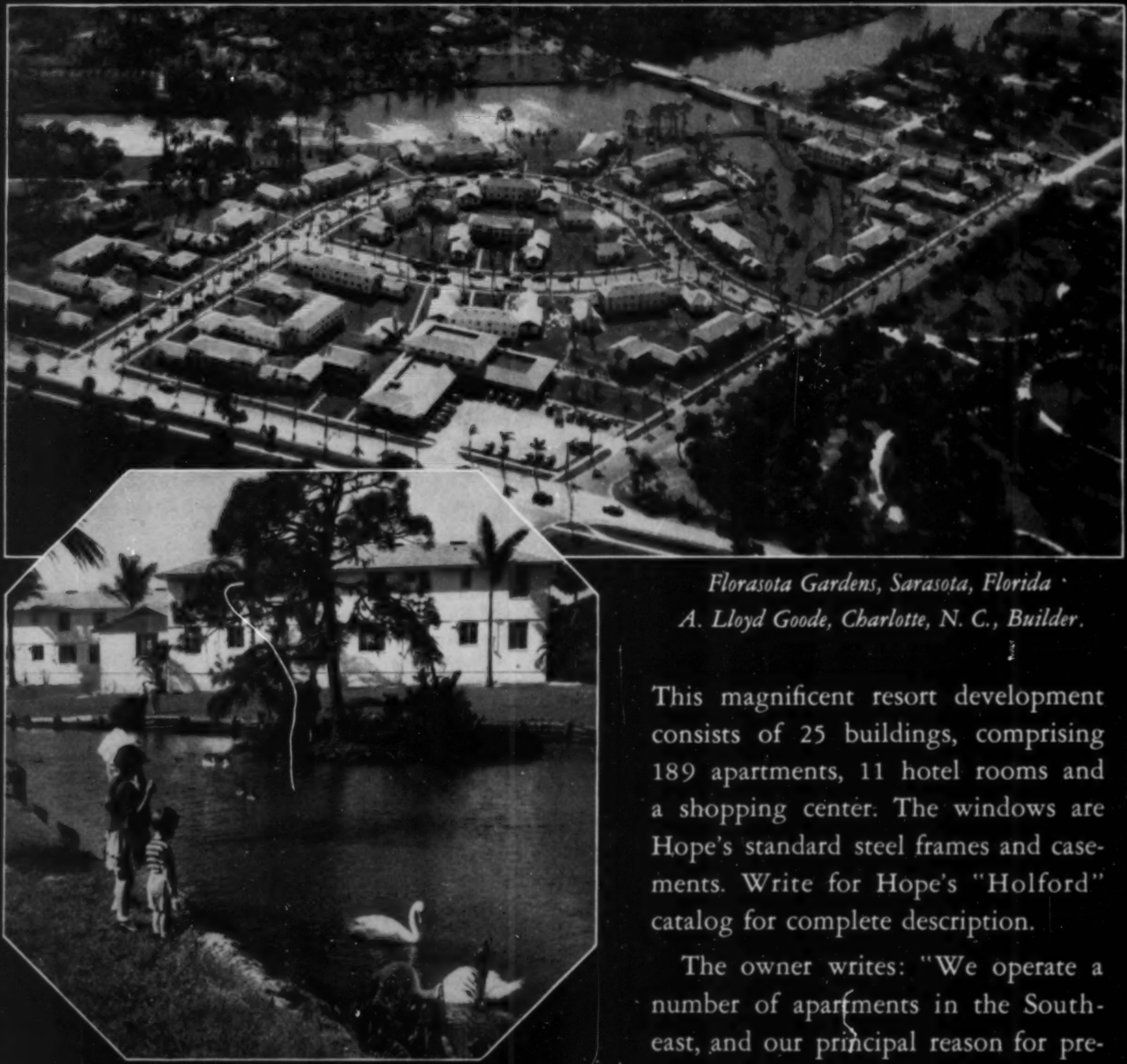

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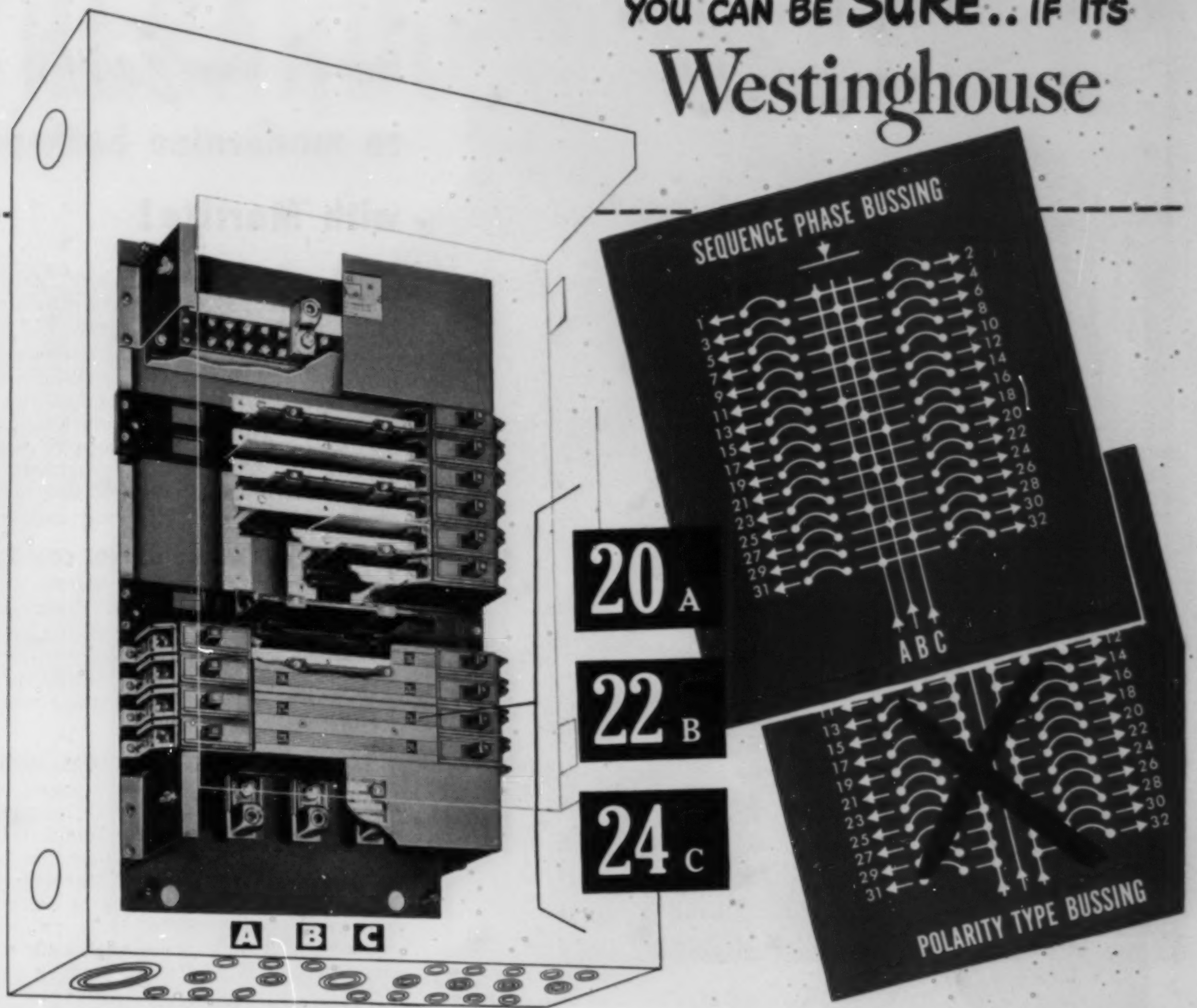
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2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32
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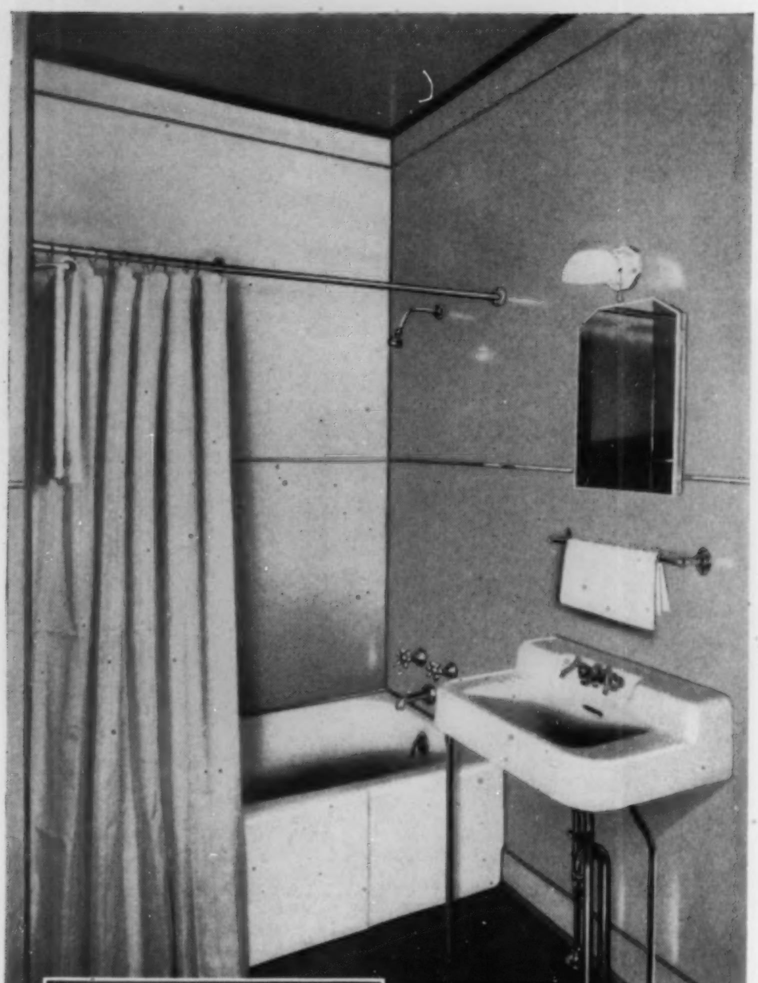

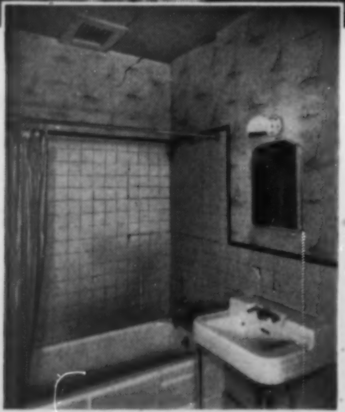

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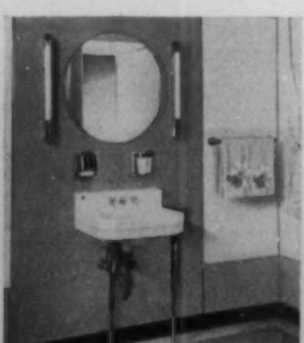

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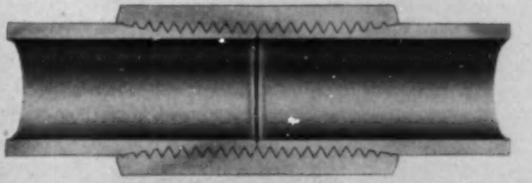

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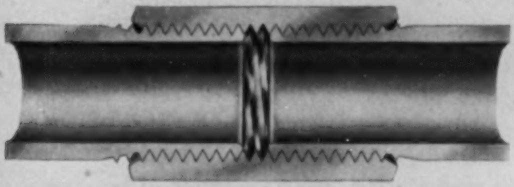

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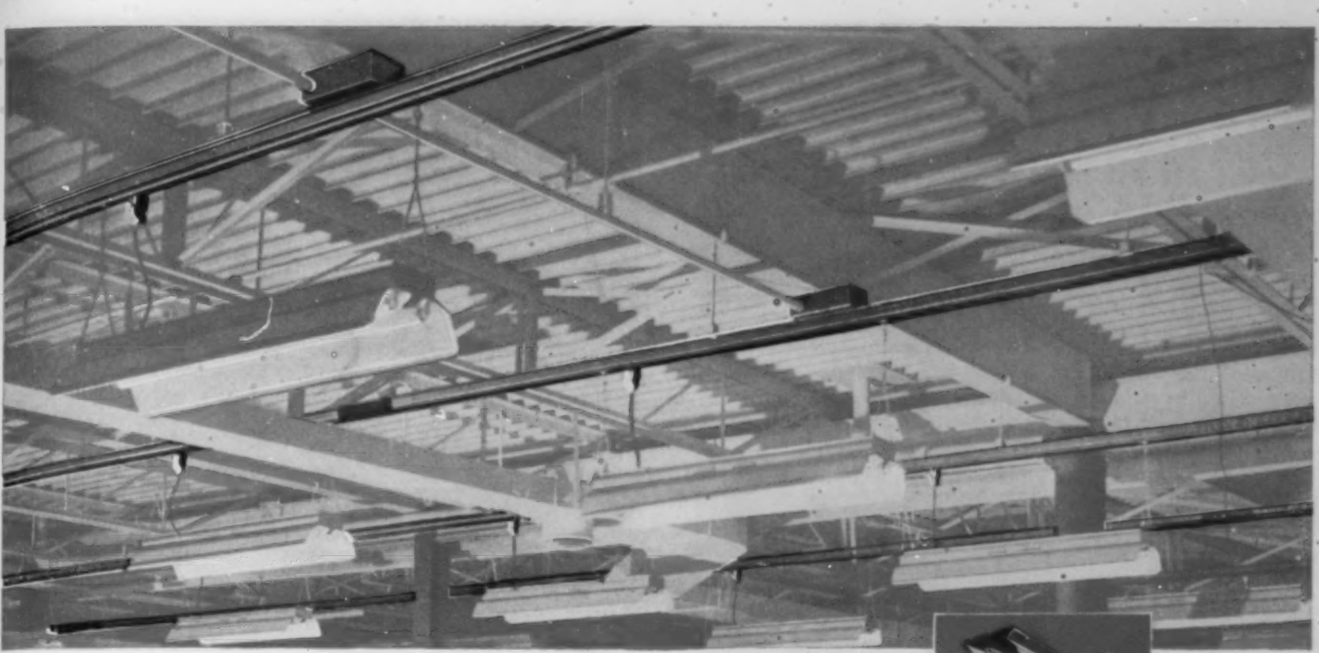

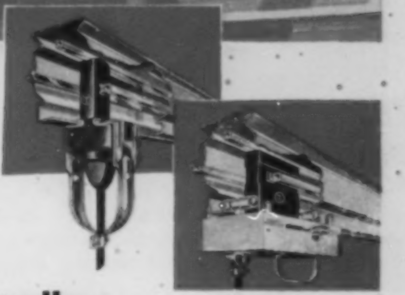

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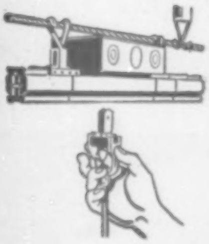

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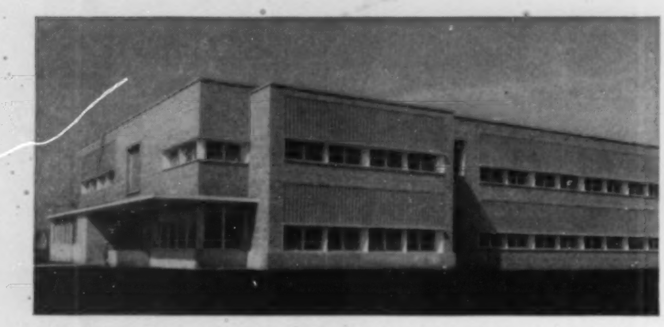
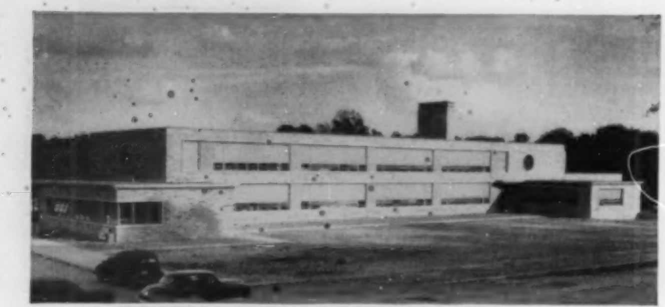


MICHIGAN! James Vernor Elementary School, Detroit, uses thousands of Insulux *light-directional* glass blocks to give uniform distribution of daylight in classroom interiors. Eberle M. Smith Associates, Architects-Engineers.

TEXAS! Use of Insulux Prismatic Glass Block, plus shaded window sections for visibility and ventilation, means better daylighting for classrooms at St. Theresa's Catholic School in Houston. Architects: Golemon and Rolfe, Houston.



MARYLAND! Unique design of Loch Raven School in Baltimore County, Md., utilizes Insulux Glass Block (No. 351) to add gracefulness to exterior; uniform lighting for desk surfaces on interior. Architects: Gaudreau & Gaudreau, Baltimore.

CALIFORNIA! For the extremely bright sun problem presented by Cragmont Test School in Berkeley, Insulux Glass Block (No. 352), with improved prism faces and special glass fiber screen inside, is used to improve classroom daylighting over old-style windows (extreme left). Architect: John Carl Warnecke, Oakland, Calif.

Four examples of the wide acceptance of Insulux... the light-directional glass block for schools!

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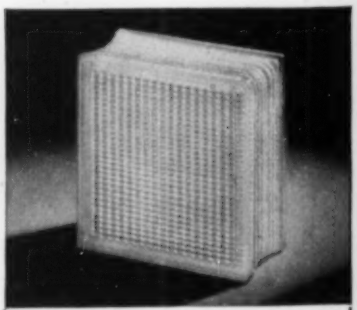
*Insulux Prismatic Glass Block with vision-strip below.



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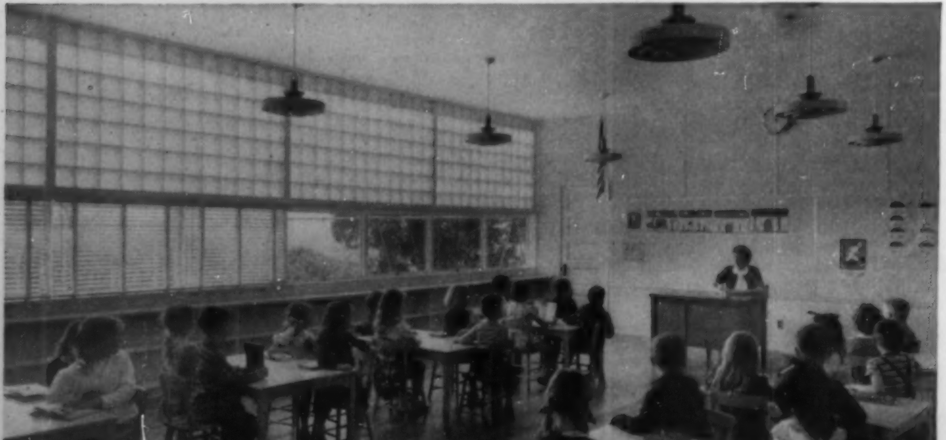

See how Insulux Glass Block panel directs sunlight upward to classroom ceiling where it is reflected uniformly to tops of desks. Elimination of sharp contrasts improves study conditions. Clear-vision strip permits ample vision and ventilation.

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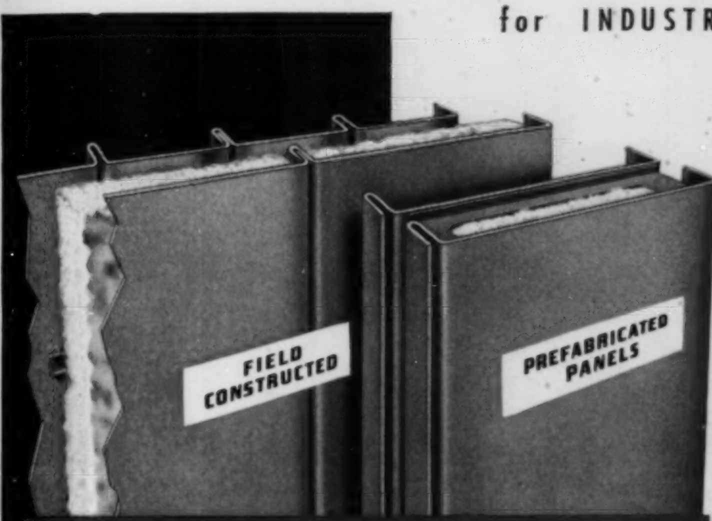

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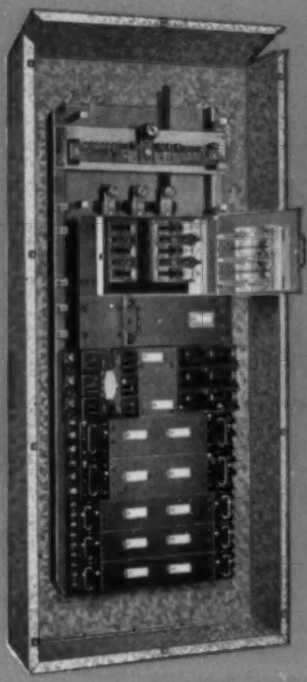
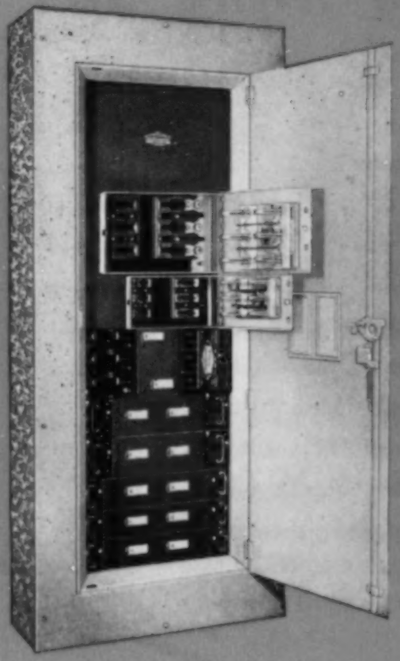


FA FEEDER PANELBOARD



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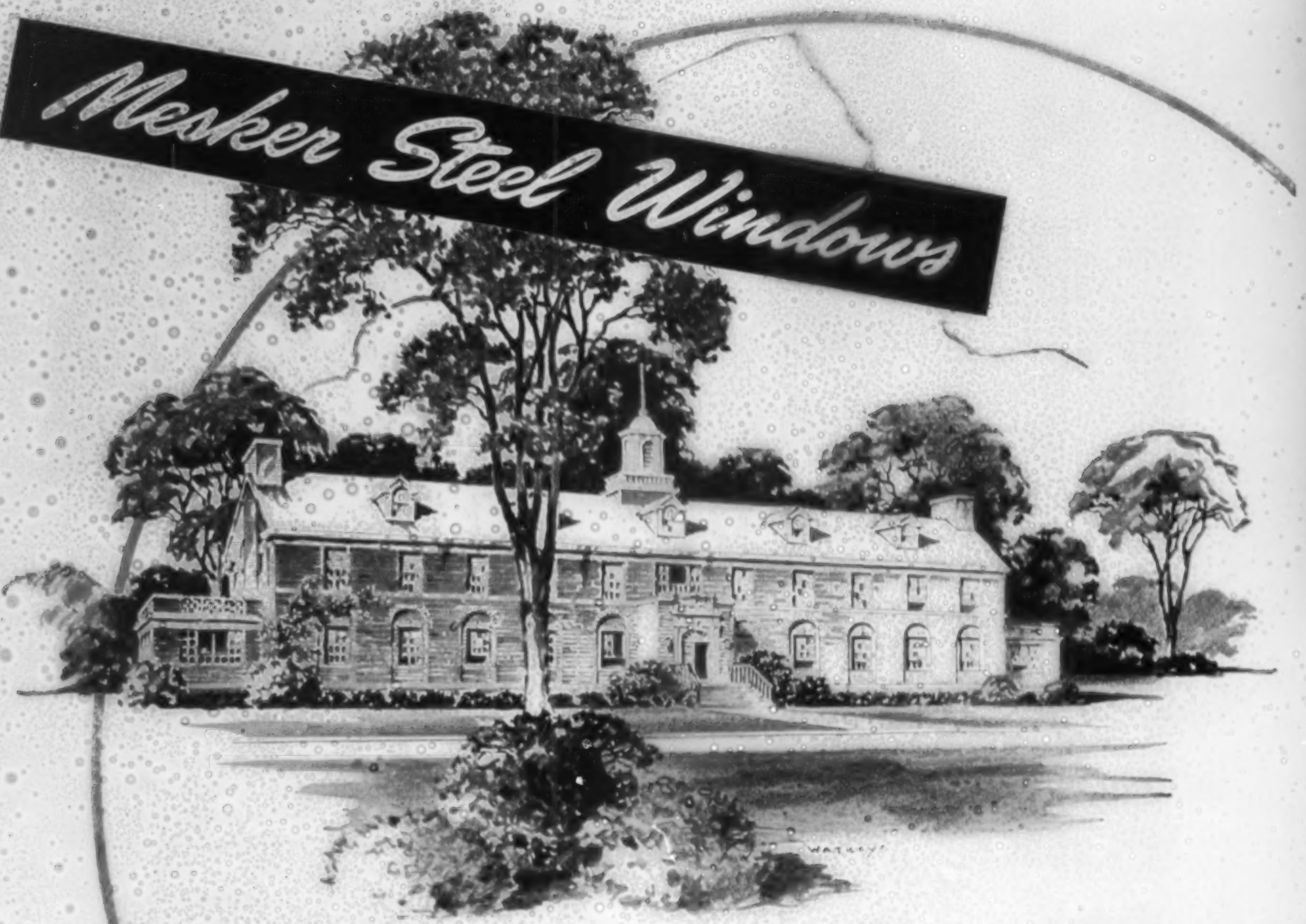

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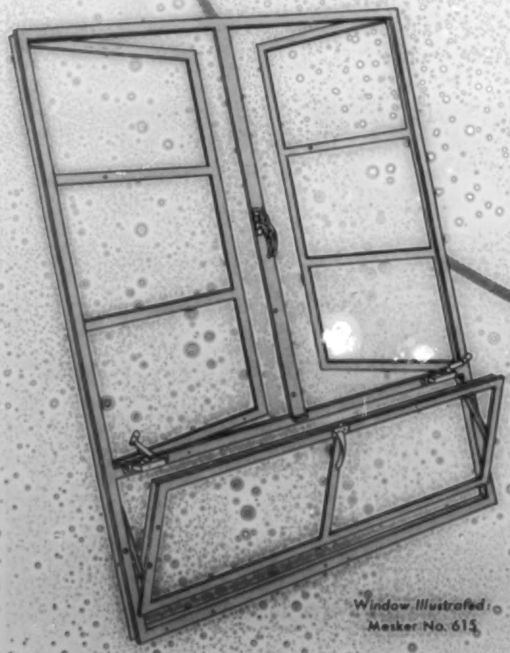
Have YOU compared Mesker Steel Window bids with other types of sash lately? Today's Mesker Windows are one way to effect substantial savings, especially on sizable projects. On institutional jobs, where limited building funds often necessitate the closest kind of figuring, you'll find "Mesker" a name worth insisting your specification writer consider! Before you award your next window contract, confer with your Mesker Sales Engineer. You'll find he is wielding a sharp pencil these days!

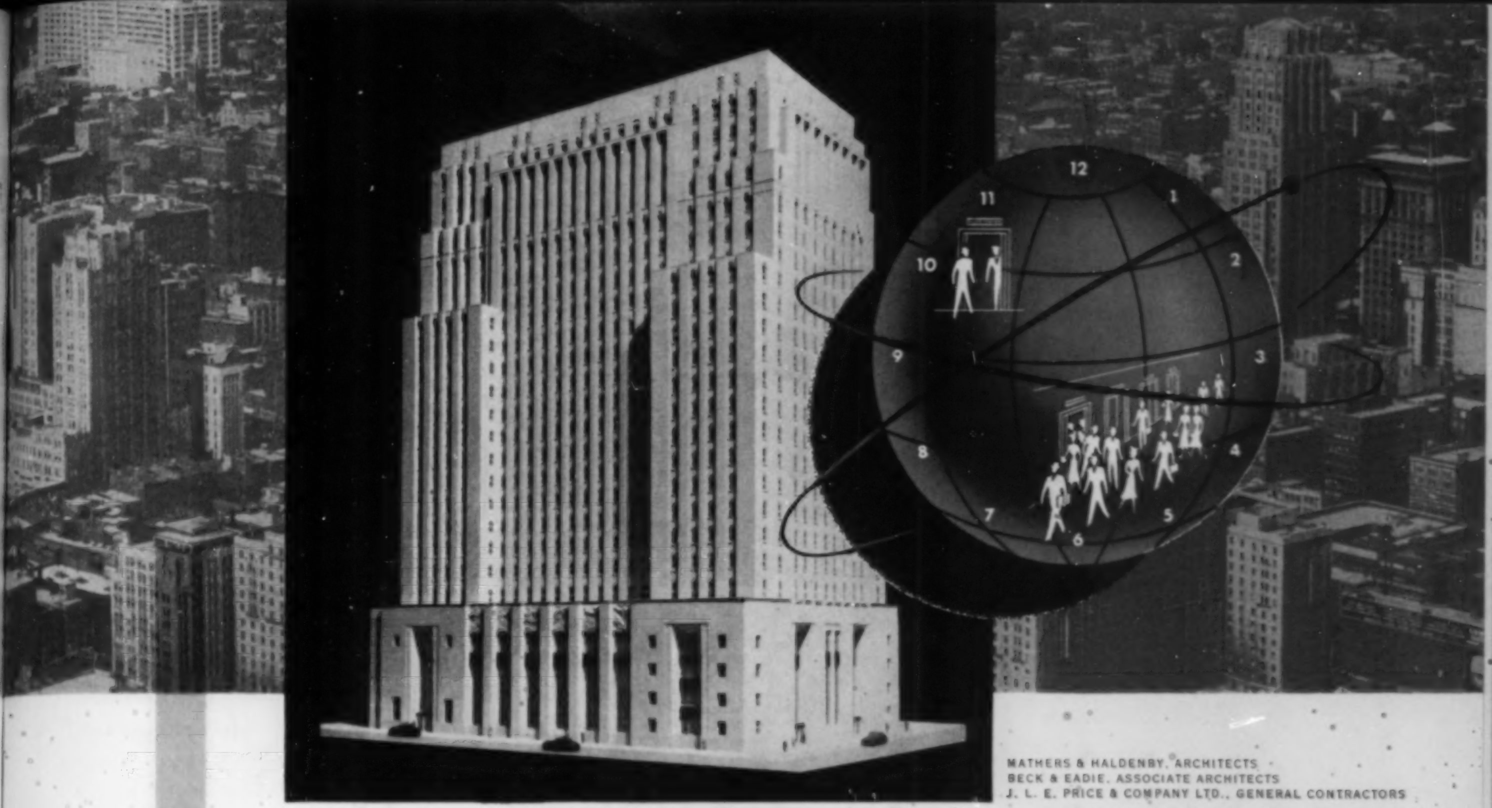


Window Illustrated:
Mesker No. 615

MESKER INTERMEDIATE COMBINATION WINDOWS

These popular steel windows have been installed in some of the country's leading schools, banks, factory offices, stores and public buildings. Members 1¾" deep are extra heavy, extra strong. Available with and without hopper ventilators in a wide range of heights and widths. See the Mesker Catalog in Sweet's, or write for detailed data sheets.

MESKER BROTHERS • 4338 GERALDINE AVENUE • SAINT LOUIS 15, MISSOURI



MATHERS & HALDENBY, ARCHITECTS
BECK & EADIE, ASSOCIATE ARCHITECTS
J. L. E. PRICE & COMPANY LTD., GENERAL CONTRACTORS

THE BANK OF NOVA SCOTIA TORONTO, CANADA
buys OTIS AUTOTRONIC ELEVATORING

The Bank of Nova Scotia Building will add still another note of modernity to the fast changing skyline of Canada's commercial and financial capital. And its elevatoring will add an advanced note of electronics to tenant service. For Otis AUTOTRONIC Traffic-Timed ELEVATORING is the only system that is timed to the 6 traffic patterns of the entire business day. It is the only system that measures passenger waiting time during rush hours, and automatically gives special service to the "forgotten man." It reduces passenger waiting time during all types of traffic.

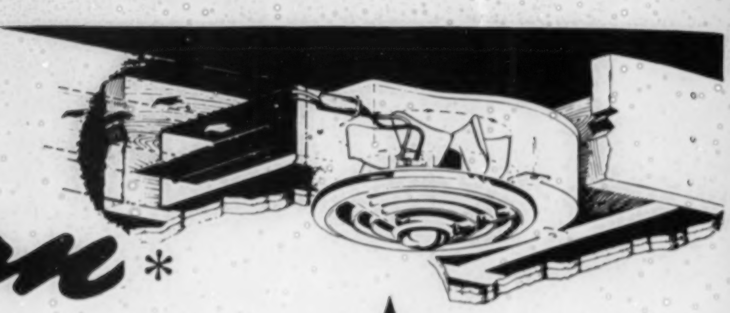
In addition, Otis AUTOTRONIC Traffic-Timed ELEVATORING is dramatic. A passenger merely "touches," not pushes, an electronic directional arrow in the landing fixture. The arrow glows, the call registers, and a car arrives promptly—as if by magic.

Otis Booklet B-721-F explains how AUTOTRONIC ELEVATORING will increase the service prestige of NEW and MODERNIZED buildings and help to hold tenants at profitable rentals for years to come. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

Otis
AUTOTRONIC
traffic-timed
ELEVATORING

35 other NEW and MODERNIZED office buildings, hotels, banks and department stores have also bought this entirely new concept of elevatoring.

Blo-Fan*



IS *superior!*

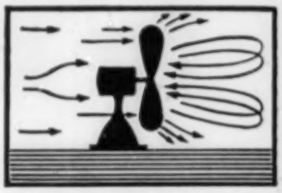
IN THE KITCHEN—Blo-Fan installs over the range, where it will whisk out steam, grease, and cooking odors as they rise before they spread.

IN THE BATH—Blo-Fan quickly expels steam from the bathroom—avoids foggy mirrors and steam-streaked walls—the air stays crisp and fresh.

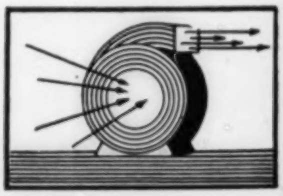
IN THE GAME ROOM—Blo-Fan eliminates tobacco and other odors by removing stale air before it contaminates the drapes and furnishings. No morning-after odors.

IN THE LAUNDRY—In any weather Blo-Fan keeps the laundry clear and fresh. Steam is expelled before it spreads, windows do not fog...air is kept dry and crisp.

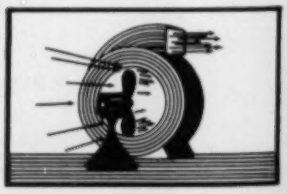
HERE'S WHY!



FAN—75% of the air moved by a breeze fan is thrown from the blade tips. The center is weak when it meets resistance. A fan delivers volume, but it lacks power.



A BLOWER draws a smaller amount of air into the vortex, discharging it with great velocity, thus overcoming resistance. A blower delivers power, but it lacks volume.



Blo-Fan combines the volume of a fan with the power of a blower. The fan blades feed the vortex of the blower so the vanes are fully loaded. That's why Blo-Fan delivers more air with more power.

Spot Ventilation at the point of Air Pollution

*Trade Mark Reg.

Manufacturers of
PRY-LITES
...the modern recessed lighting fixtures with snap-on fronts.

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Stocked by more than 500 wholesalers in more than 350 cities

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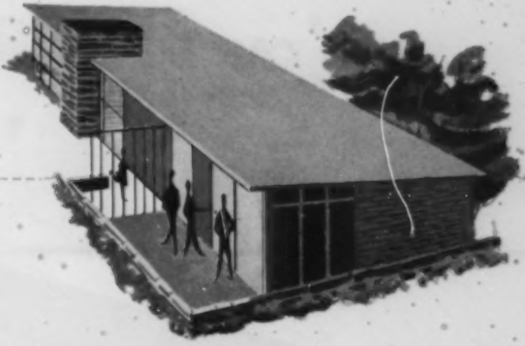
MODERN HOMES



call for COPPER soil, waste and vent lines

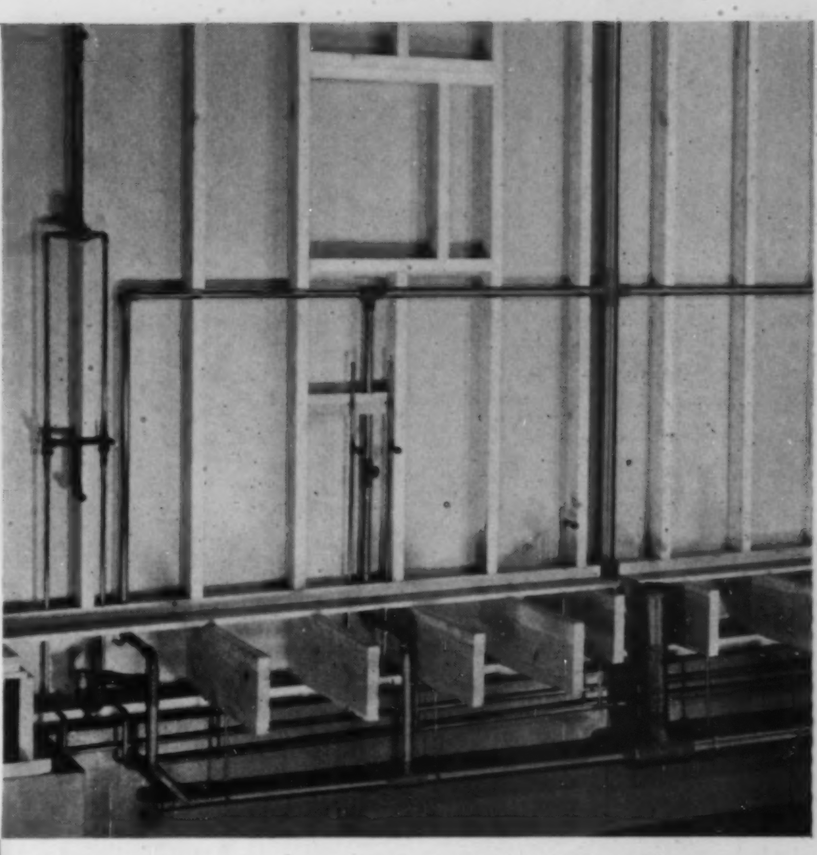
Increasingly—and for the same reasons it's being used so widely for water and heating lines—architects and owners are acknowledging that copper is the ideal pipe for soil lines, waste lines and vents. The evidence? More and more local building codes are being revised to include the use of copper tube and solder-type fittings for this purpose.

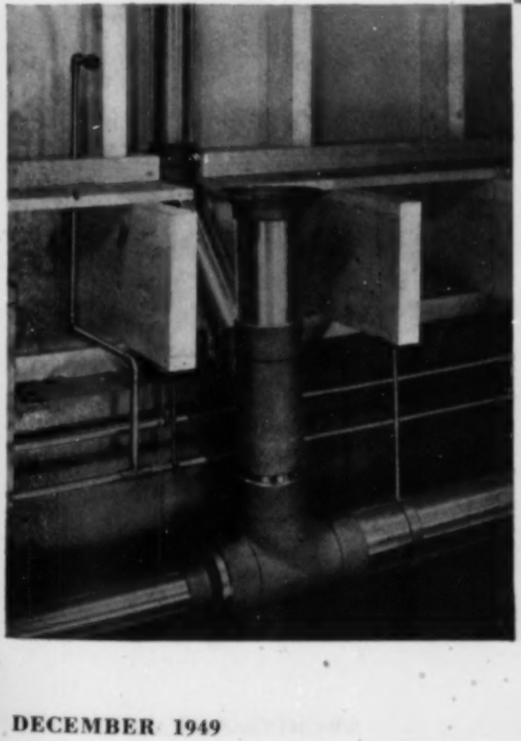
Here are the reasons in a nutshell:

An installation of copper tubes using ANACONDA Type M, which are manufactured for this purpose only, costs no more than other materials. The heavier gages, Type K and L Copper Tubes, can be installed for but little more.

Copper tubes are light, take less space—20-foot lengths simplify design, eliminate many joints.

Copper tubes give greater owner satisfaction, better performance because smooth bore drains faster, reduces possibility of stoppages.





Demonstration house-section illustrates an all-copper plumbing installation. Water supply lines are Type K. Closeup shows economical space requirements and the simplicity of using solder-type fittings.

If you would like specific information or particular details, we will gladly supply them. Just write to The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario. 4904

For better plumbing . . . use

ANACONDA

COPPER TUBES

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

PLANT NETWORK DEMONSTRATOR
WESTINGHOUSE
W
Economic Analysis of Eleven Basic Systems
TABLE II
Type of Distribution System
1 CONVENTIONAL SIMPLE-RADIAL
2 MODERN SIMPLE-RADIAL (a)
3 MODERN SIMPLE-RADIAL (b)
4 LOOP-PRIMARY RADIAL
5 BANKED-SECONDARY RADIAL
industrial
plant
distribution

REAL HELP!

...FOR YOUR POWER SYSTEM PLANNING

Designing a new plant? Expanding an old one? Changing production lines? If so, *have you planned the power distribution system?*

The success of the new production areas depends on this planning. Choose the "one best system" for the plant you're designing. And before you choose . . . get the complete story on modern *system planning.*

Make money-saving decisions. See why initial cost is a minor factor. Choose the system with the lowest *long-range* cost . . . the one that will *really* save money for your client. Be sure it will handle present AND future loads.

Selecting such a system can be easy! Our engineers have met and answered power distribution problems for *all* types of industries. This broad experience is available to help you adapt distribution systems to the plants you're designing.

And as a further service, we've prepared this valuable information in the form of . . .

- **A New 34-Page Booklet:** "Industrial Plant Distribution Systems", B-4045. Fact-filled pages and colorful diagrams completely explain the eleven basic systems most widely used in industry today. It will provide answers to many of your problems that have gone unsolved.
- **A System Selector:** A wealth of information condensed to a pocket-sized selector. In a matter of minutes you can make preliminary decisions on the system that best answers the requirements *you've* got to meet.
- **A Full-Color Movie:** Get all the facts visually! This 16-mm sound movie is a 20-minute dramatization that will clearly point the way to new economies in plant power distribution. Ask your Westinghouse representative for a free showing. No obligation, of course.
- **A Network Demonstrator:** Operating display for meetings shows how a plant network system actually works—and what it does—under any load condition. Find out from your Westinghouse representative when there will be a demonstration in your area.

Get this key information on system planning NOW. Call your nearest Westinghouse office. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna. J-94790-A

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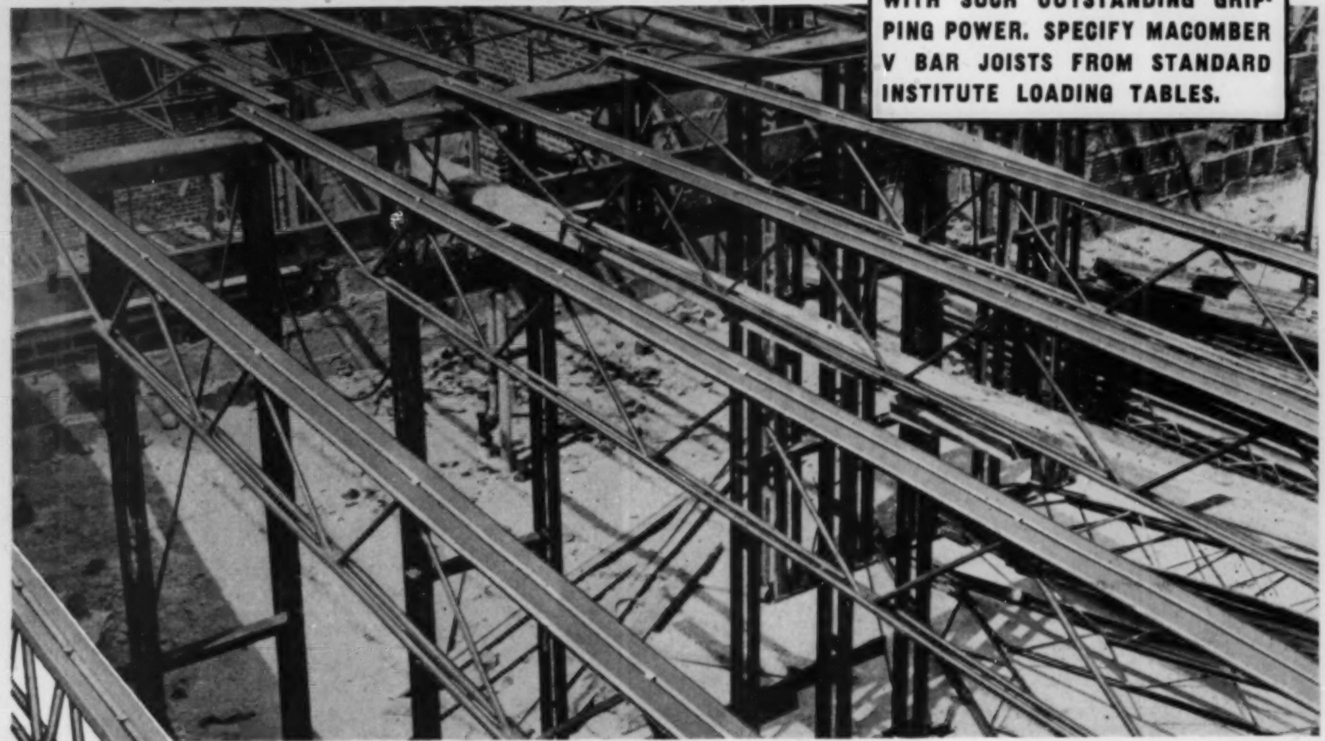
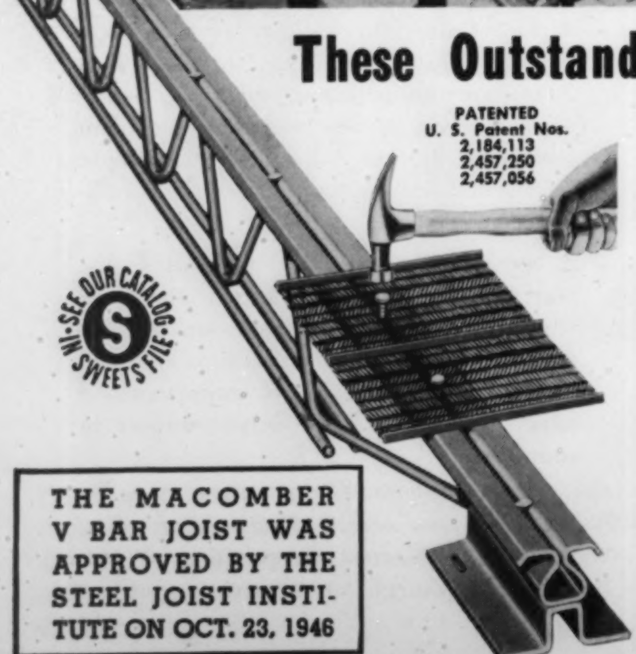
SYSTEM PLANNING SERVICE

ALL A BUILDER HAS TO DO IS SPECIFY MACOMBER NAILABLE STEEL JOISTS AND LOOK WHAT HAPPENS

ONLY THE PATENTED MACOMBER V SECTION USED AS THE TOP CHORD OF ALL V JOISTS PROVIDES SUCH EASY NAILABILITY WITH SUCH OUTSTANDING GRIPPING POWER. SPECIFY MACOMBER V BAR JOISTS FROM STANDARD INSTITUTE LOADING TABLES.



These Outstanding Advantages Cost No More



Any floor or roof finish you desire, any covering or slab centering material made can be securely nailed to Macomber V Bar Joists.

You have just this ONE TYPE of joist to specify for any job that can be built and you get HOLDING POWER — per nail — 2½ times the grip of common nails in wood. (P.T.L. Nail Pull Tests.)

Look at the surface you have to receive pre-cast slabs or planks. Or maybe you have a Steel Deck job and want an ideal welding surface.

Add it up and you have the outstanding Steel Joist value in a Builder's Unit designed to save time, fit all needs and do a better all-around job. Send for: NAILABLE V JOIST CATALOG.

THE MACOMBER V BAR JOIST WAS APPROVED BY THE STEEL JOIST INSTITUTE ON OCT. 23, 1946

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STANDARDIZED STEEL BUILDING PRODUCTS

MACOMBER · INCORPORATED

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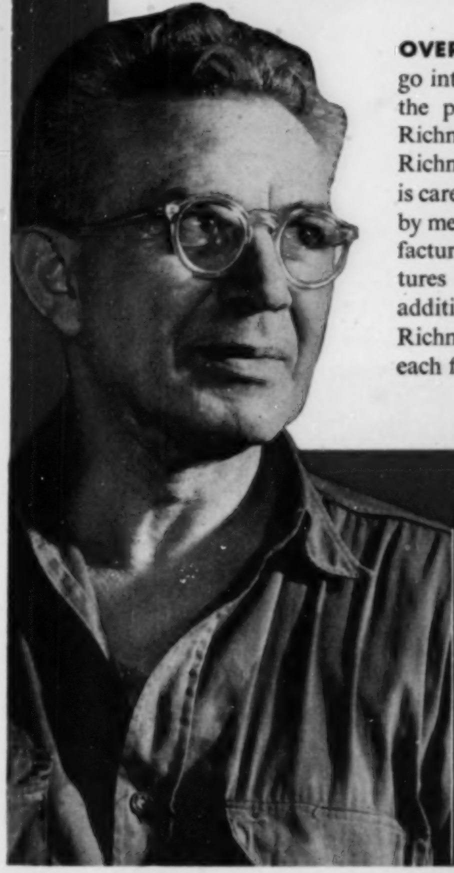
IN CANADA, SARNIA BRIDGE CO., LIMITED, SARNIA, ONT.
IN MEXICO D. F.—MACOMBER DE MEXICO S. A. CEDRO 500

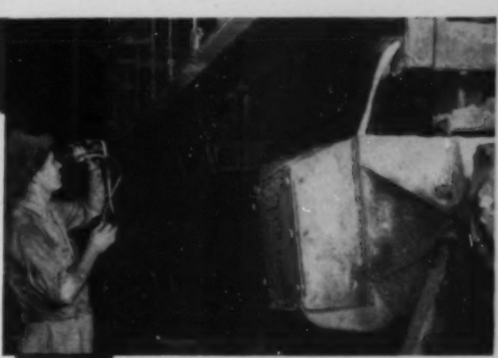
V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

Meet a Man with an Enamel Eye!

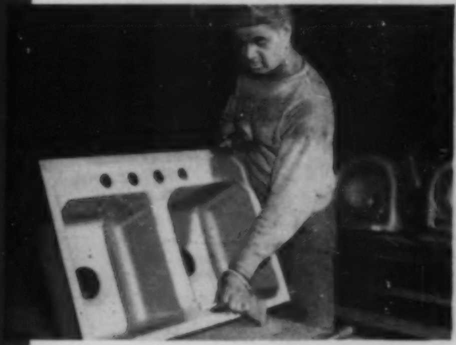
A FINE EYE for fine enamelware has John Berrigan —developed through his years of experience in foundry and enamel work. As Chief Inspector at Richmond's Monaca, Penn., plant, eyeing enamelware, from casting to finished fixture, is Berrigan's job. His critical, discerning eyes are constantly at work checking the flow of Richmond enamel cast iron fixtures and keeping them at their high standard.



OVER 100 YEARS of experience go into these four typical steps in the production of a top-quality Richmond enameled sink. Each Richmond sink, bath and lavatory is carefully checked and rechecked by men who have made the manufacture of quality plumbing fixtures their life work. For your additional assurance of quality, Richmond places its guarantee on each fixture.



Frank Jandrlich,* *10 years at foundry work, is foreman of the Cupola section. To insure perfect castings, he keeps the flow of molten iron at a constant uniform temperature. He is shown checking on temperature with his Optical Pyrometer.



William Bentley,* *23 years in grinding room work, inspects casting after it has been shot blasted and ground smooth. He makes sure it is in perfect condition for enameling.

Edward Roth,* *37 years an enameler, critically inspects his handiwork after he has applied the Richmond Whiter-white enamel to the sink casting.

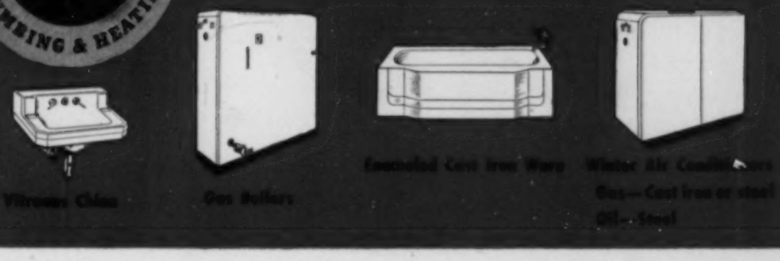
AND NOW IT'S GUARANTEED

William Barton,* *28 years with enamelware, gives sink its final inspection. After both the casting and the enameling pass his thorough inspection the fixture is ready for the Richmond guarantee and shipment.

RICHMOND

RICHMOND RADIATOR CO.—AFFILIATE OF REYNOLDS METALS CO.

SEE OUR CATALOG IN SWEET'S



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Richmond Radiator Company
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New York 17, N. Y.

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Please send me the latest literature and information on the Richmond line of fine plumbing fixtures. No obligation, of course.

Name....................................

Company....................................

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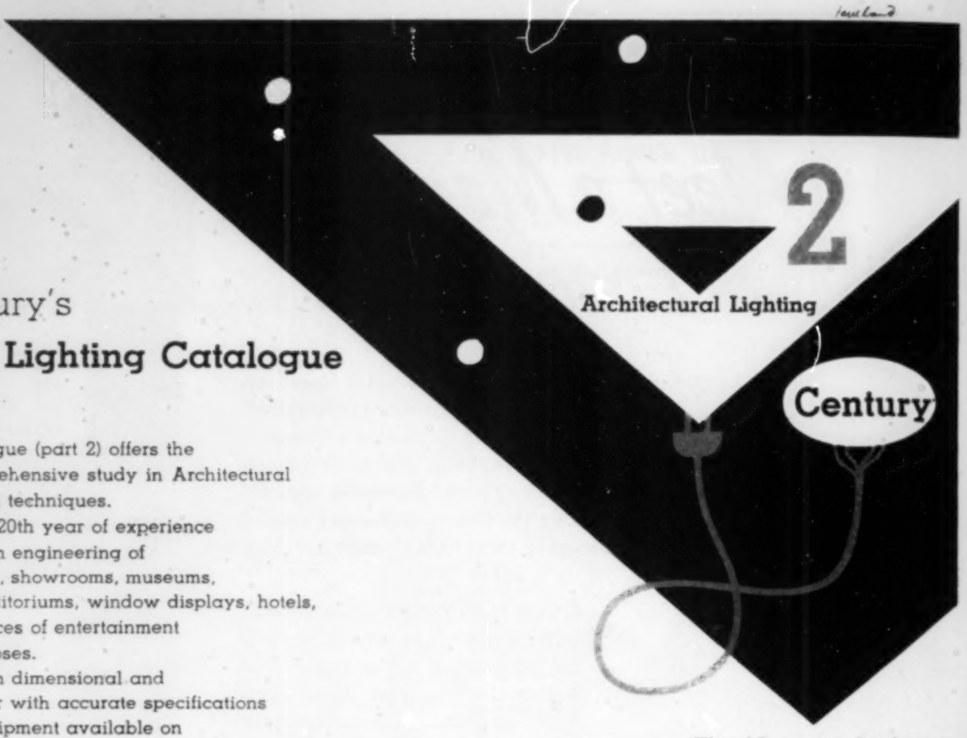

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The Name in Lights

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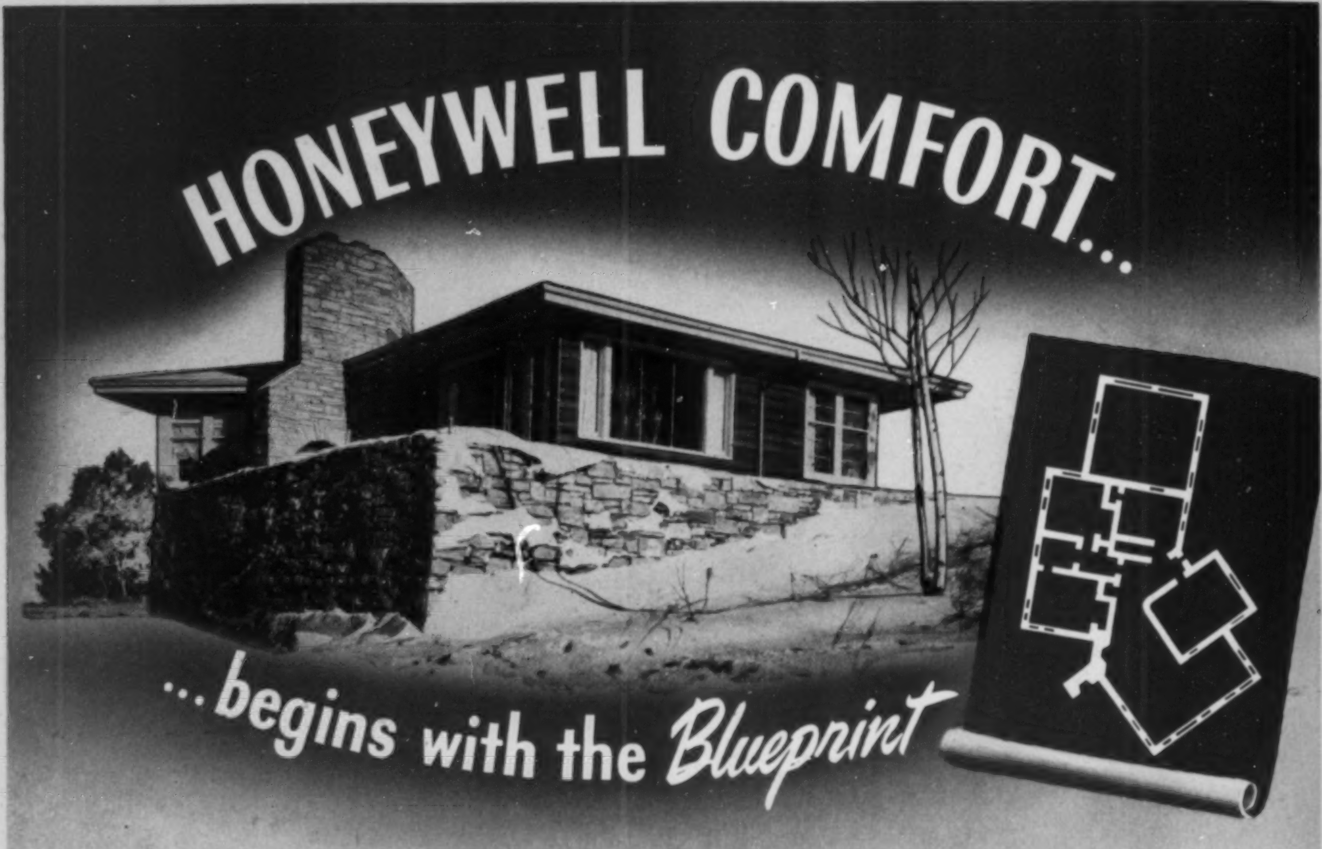
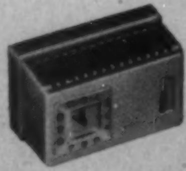
LCN CATALOG 11-E ON REQUEST OR SEE SWEET'S • LCN CLOSERS, INC., 466 WEST SUPERIOR STREET, CHICAGO 10



WHATEVER a house may cost, it will not be a real *home* unless it is comfortably heated. So, in Honeywell national advertising we are urging home builders to consult you about their heating system while plans are in the blueprint stage.

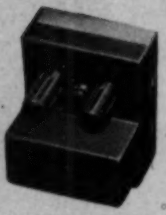
Here are some of the Honeywell controls and control systems that can be selected, depending upon the size and type of home.

CHRONOTHERM*
Electric Clock Thermostat



Every home should have the convenience and economy of automatic clock thermostat regulation. Chronotherm automatically switches to lower fuel-saving temperature at bedtime. Then in the morning, before the family gets up, it restores daytime comfort temperature. Chronotherm will save 10% or more fuel and will give far greater heating comfort and convenience.

ELECTRONIC MODUFLOW*
Control Systems


Electronic Relay

The new Honeywell Electric Moduflow control system will give an entirely new conception of even, continuous heating comfort. Electronic Moduflow combines the magic speed and sensitivity of electronics with the Moduflow principle of continuous heat flow. It does away with drafts and cold floors caused by intermittent heat supply.

ZONE CONTROL

Electronic Thermostat

In larger homes and ranch-type homes, more uniform temperatures will be obtained throughout the house by an Electronic Moduflow system with two or more thermostats located in different sections of the house. In basement recreation rooms, for example, a separate thermostat will maintain just the desired temperature without affecting the rest of the house.

RADIANT PANEL HEATING

Because of its extreme sensitivity and dependability, an Electronic Moduflow control system will insure best results from radiant panel heating installations.

For further information about Honeywell Controls and Control Systems, contact the Honeywell branch office in or near your city. Or, mail the coupon for the 3 free booklets, "Electronic Moduflow;" "Electronic Moduflow for Radiant Panel Heating;" "Zone Control and Individual Room Control."

*Trade Mark

MINNEAPOLIS
Honeywell
CONTROL SYSTEMS

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
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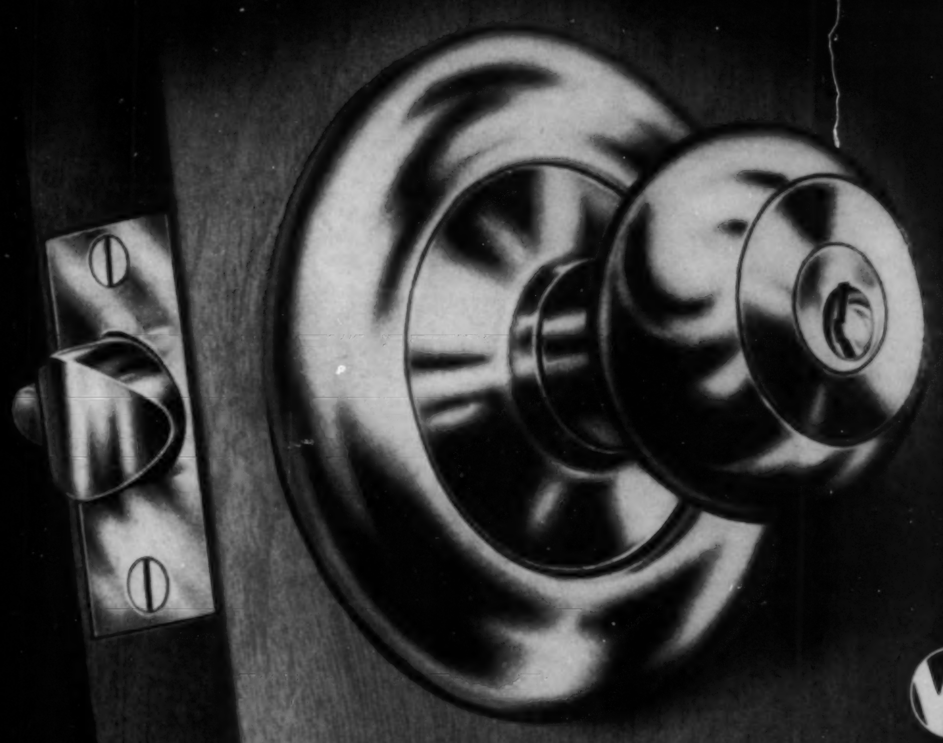

WESLOCK

CYLINDRICAL LOCKS

Melody design

large escutcheon No. 256 shown
with WESLOCK No. 240 five-
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Another WESLOCK installation,
Richlee Gardens, Mineola, New York,
204 apartment units—FHA insured.

Architects: Samuel Paul Associates,
Jamaica, New York

Builder: Silbert Construction Co.,
Great Neck, New York

Hardware Contractor: Samuel
Golden, Brooklyn, New York

New heights in style

Accepted by Architects and Builders as one of the most modern lock set accessories, the WESLOCK Melody escutcheon is the only design of its type available in any line. Although budget-priced, WESLOCKS are of the highest quality and unconditionally guaranteed. Send for a catalog of the complete WESLOCK line which is the best at *any* price.

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FIVE FITZGIBBONS STEEL BOILERS were selected to serve this new and beautiful milestone of Western development, designed as a store and office building with every modern feature of convenience and utility. Four of the Fitzgibbons "D" Type steel boilers provide heat for seasonal needs, while the fifth supplies service hot water throughout the year.

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- EASY TO HANDLE

Whether your job is the basement or upper floors, there will be a minimum of mess and a maximum of neatness with efficient, easy to handle vermiculite. Packed in 32 lb. bags, it can be mixed indoors.

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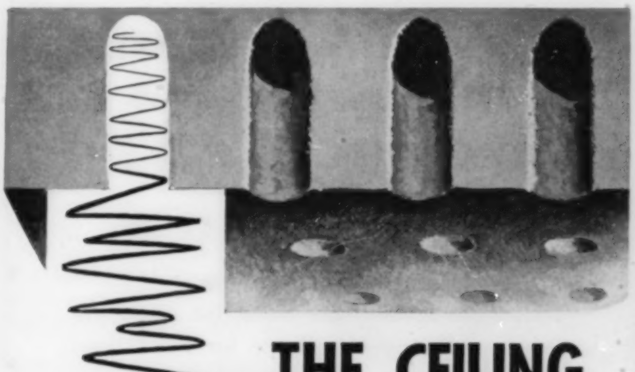

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with a hundred thousand
"NOISE TRAPS"

Send for Free, Fascinating Brochure: Tells you about Fibretone*, the acoustical ceiling, and how its thousands of scientifically-designed *noise traps* help eliminate unwanted noise—in offices, restaurants, banks, schools, factories, and recreation centers. Write Johns-Manville, Dept. AR 12, Box 290, New York 16, N. Y.

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Johns-Manville
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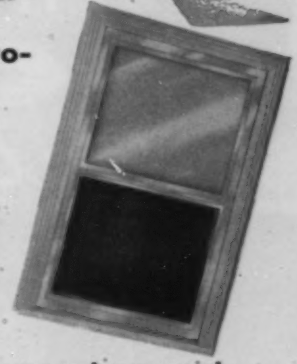
FIBRETONE

The RUSCO PRIME WINDOW
VERTICAL SLIDE



... the only ready-to-install window unit that provides year 'round, all-weather window conditioning

RUSCO gives you the most complete unit ever offered ... glass, screen, weather stripping, wood surround ... with or without insulating sash ... all in one factory-assembled unit ... ready for quick installation ... costs no more than you're paying today

Now . . . for the first time, you can specify and use a factory-assembled window unit that is extremely practical, durable and trouble-free . . . is simple to install . . . that reduces field painting and installation costs . . . that provides for year 'round safety, convenience, comfort and economy.

The Rusco Prime Window is the result of over 12 years of field experience . . . it is an adaptation of the basic engineering principles that have made Rusco all-metal, self-storing combination windows today's most widely accepted unit of its kind.

RUSCO LEADS IN DESIGN, CONSTRUCTION AND ADVANTAGES . . . All working parts of tubular Armco Steel, hot-dipped galvanized Ingot Iron Zincgrip . . . Bonderized and finished with baked-on outdoor enamel . . . All installation members of toxic-treated wood . . . Waterproof felt weather stripping assures weathertight closure . . . Requires no field painting . . . All glass and screen panels removable from inside . . . No weights, balances or cords . . . Smooth, trouble-free operation . . . Automatic positive locking in closed or ventilation positions . . . Easier window cleaning . . . Available with or without self-contained insulating sash . . . Complete unit offers the combined, year 'round advantages of windows, screens, storm sash and weather stripping.

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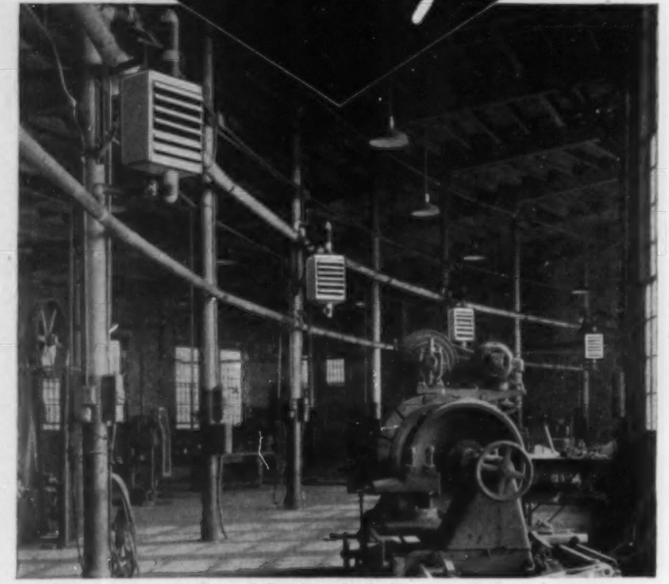
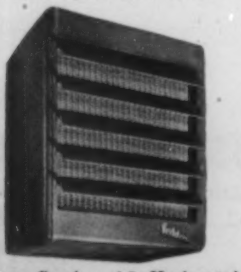
FOR HIGH OR LOW *Ceilings*



Showing installation of Fedders Unit Heaters in large railway maintenance machine shop.

Fedders Series 16 Downblow Unit Heaters available in capacities up to 2050 EDR.



Fedders Series 15 Horizontal Unit Heaters are built in capacities up to 1000 EDR.

- You will find it easier to standardize on the complete line of Fedders Horizontal and Downblow Unit Heaters for normal and high ceiling installations.

Customer satisfaction is assured wherever Fedders Unit Heaters are installed to meet the exacting conditions of industrial and commercial heating requirements everywhere.

Whether ceilings are high or low specify Fedders.

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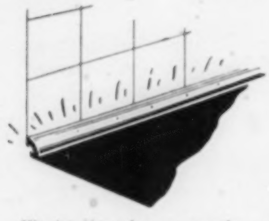

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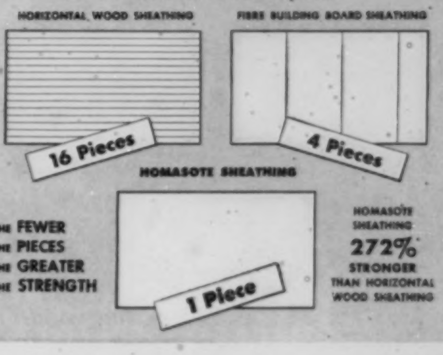

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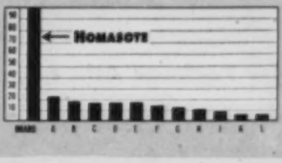

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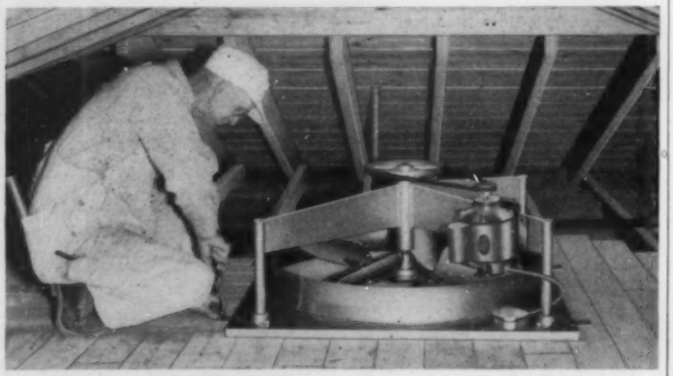

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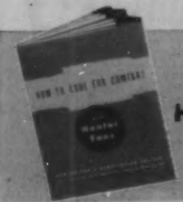

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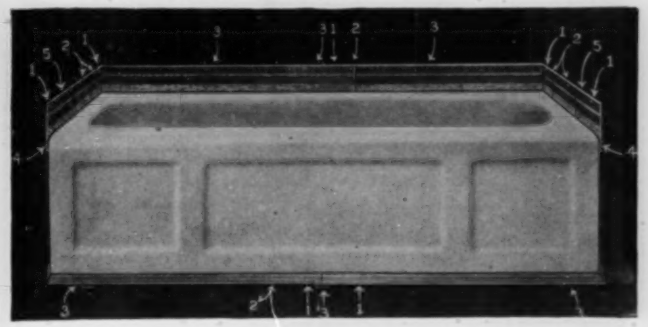

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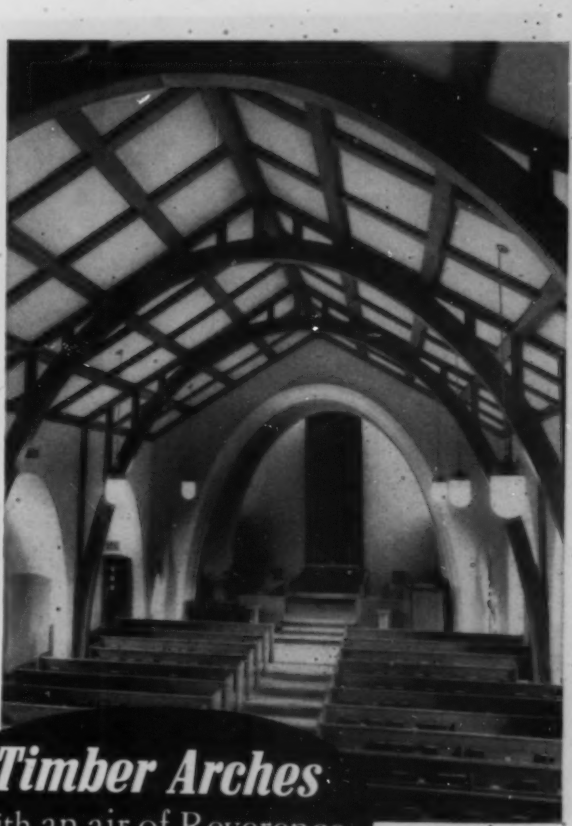

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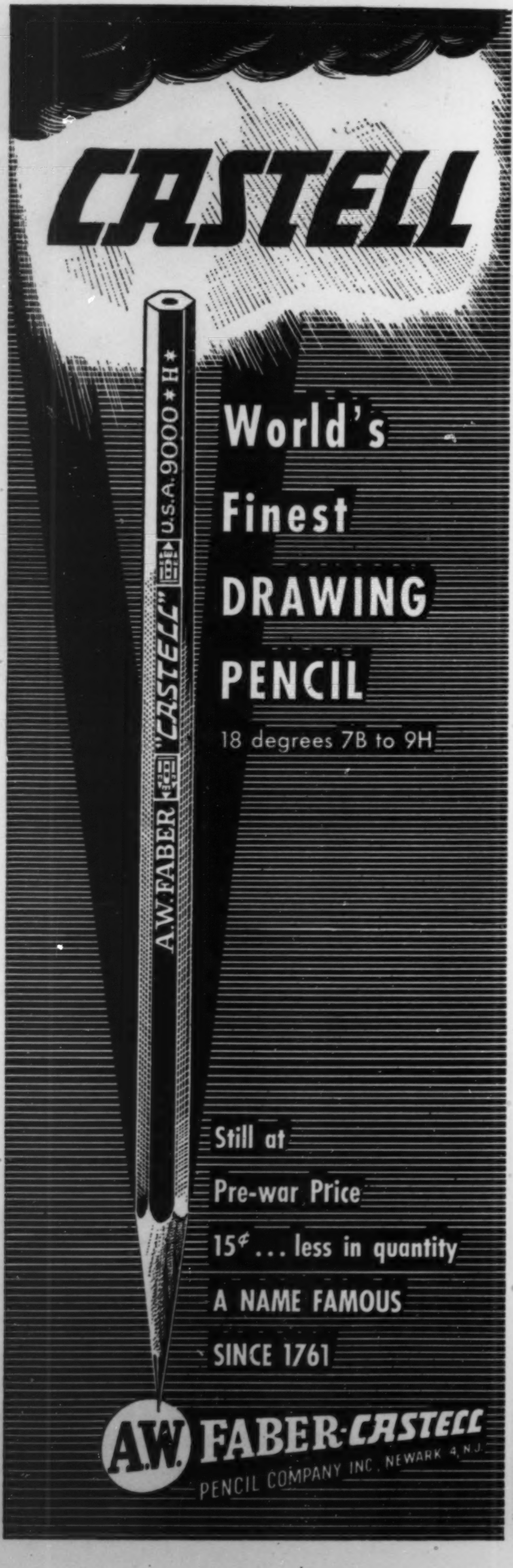

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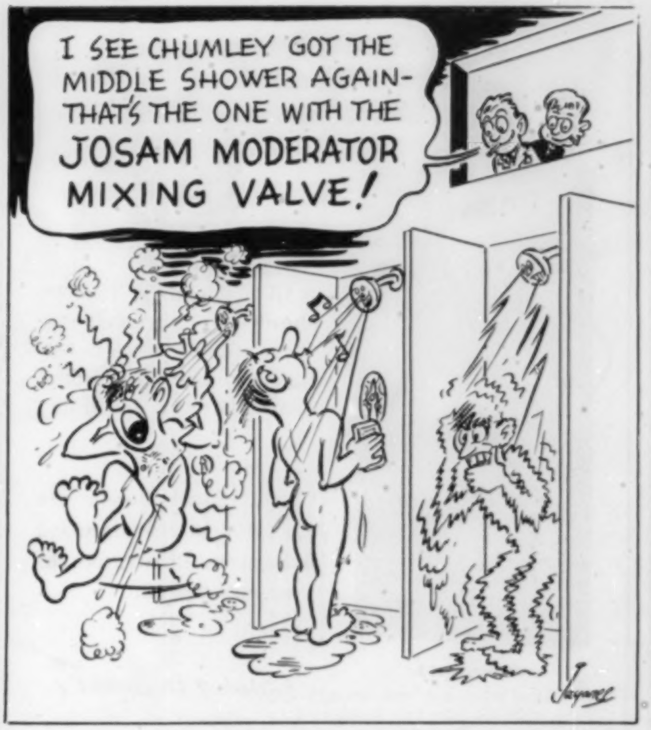
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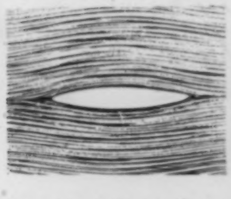

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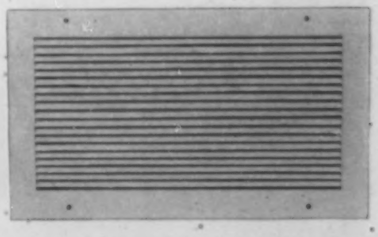

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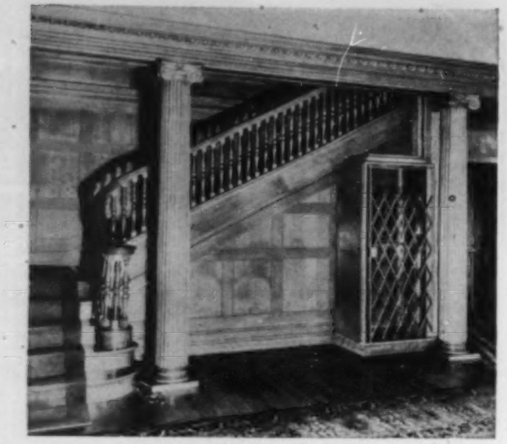

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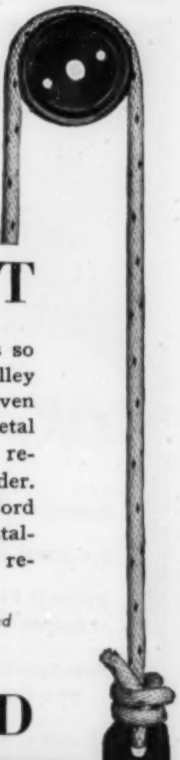

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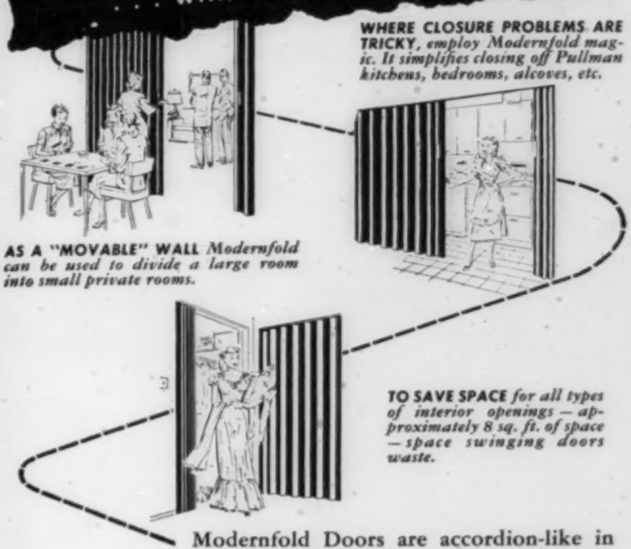

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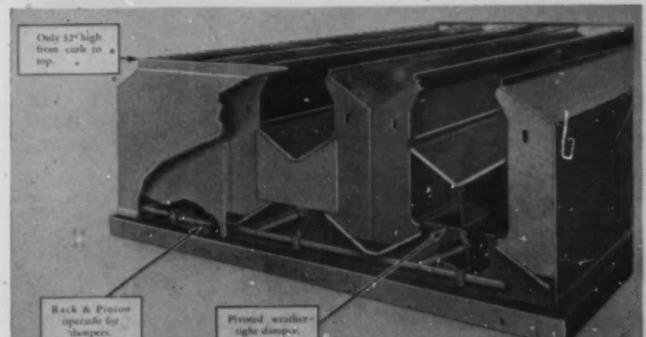

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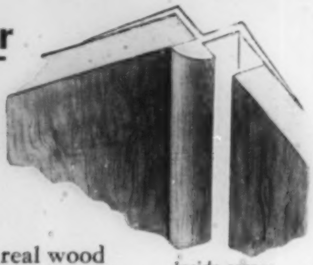

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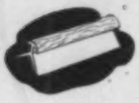

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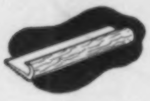

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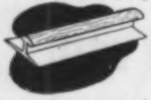

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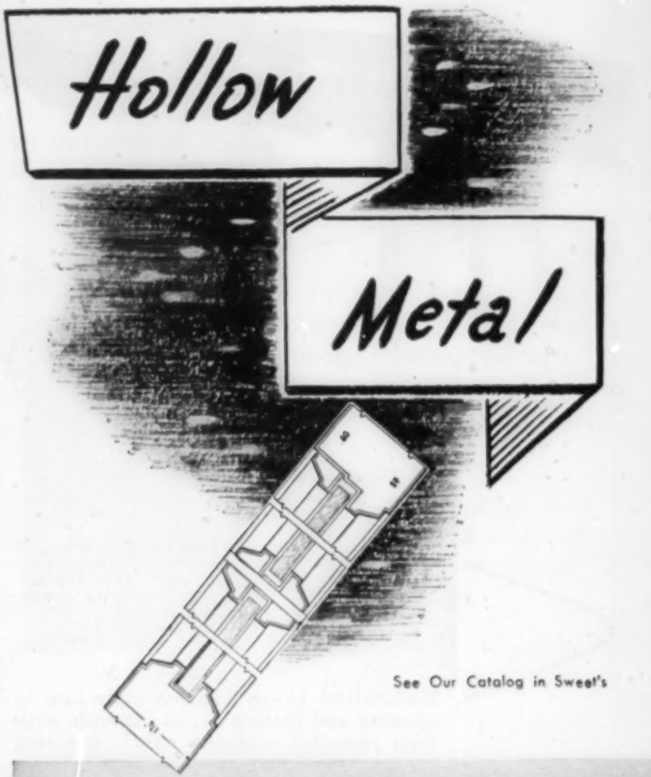

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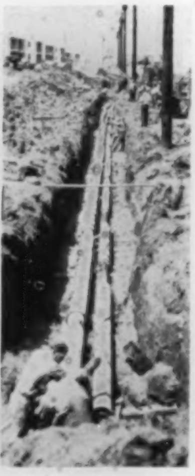

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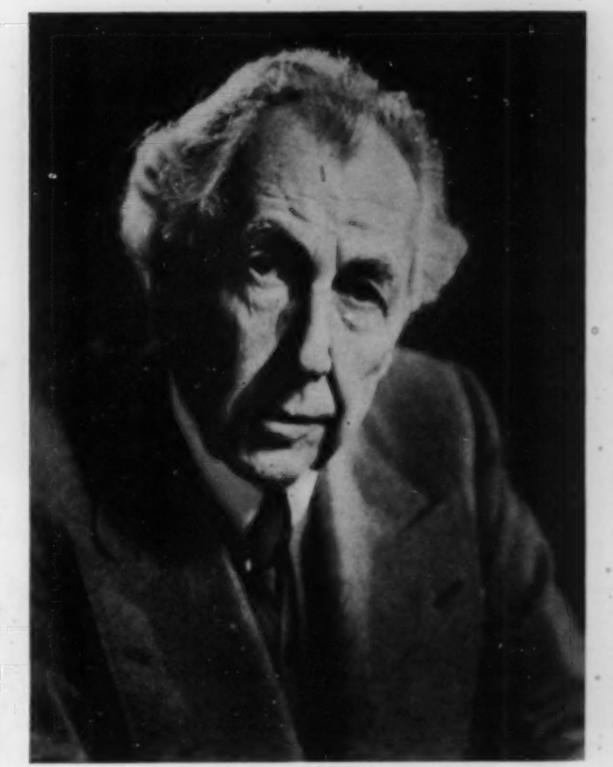

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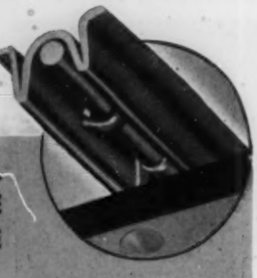

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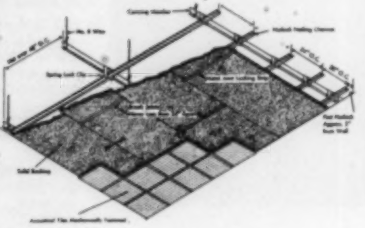

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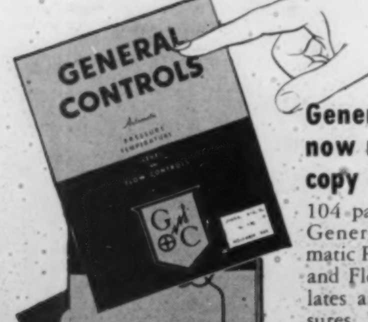
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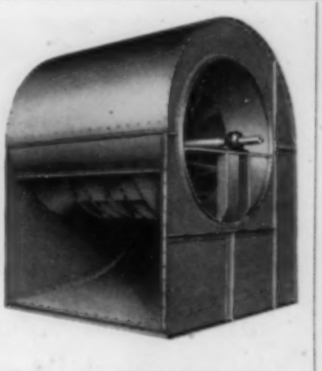

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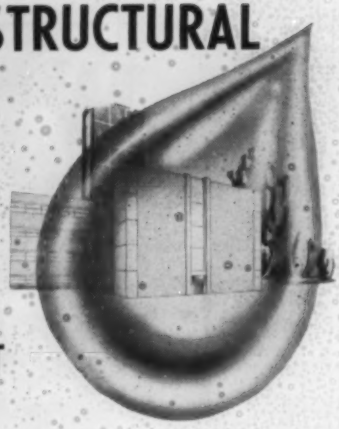

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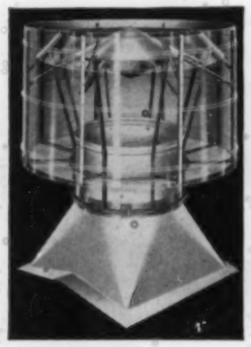

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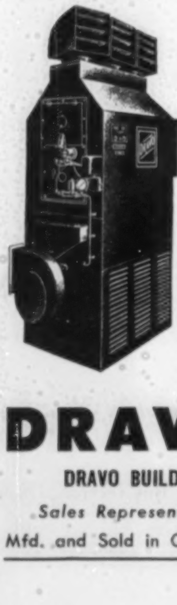

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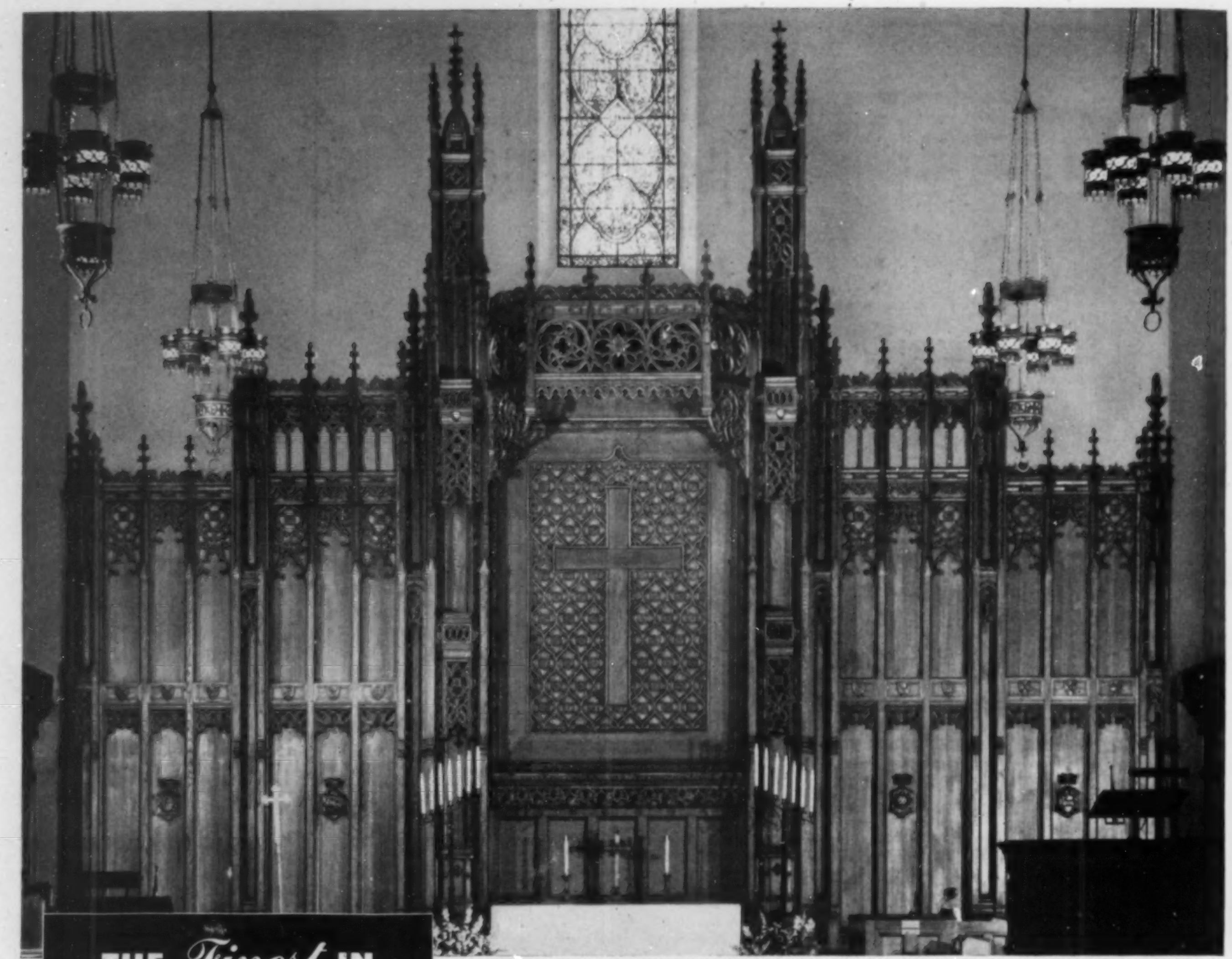

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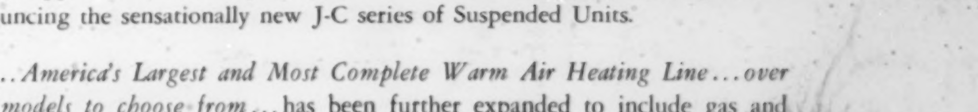

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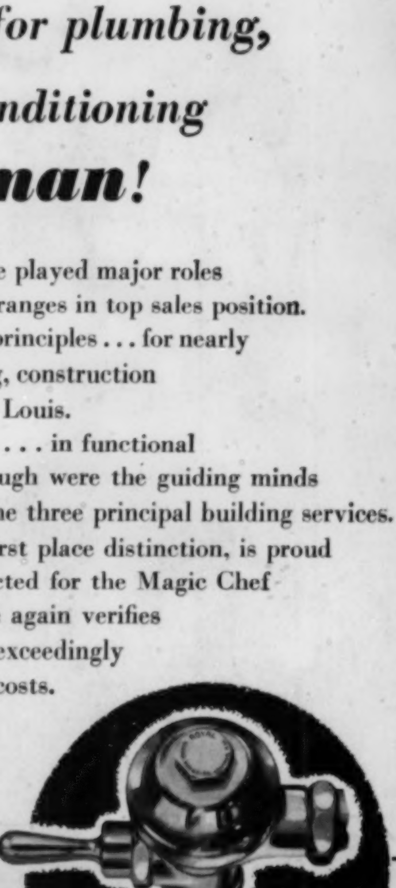

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